Motor Age

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MOTOR AGE

WITH WHICH IS INCORPORATED CYCLE AGE

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SPEED TRIALS AT STATEN ISLAND

The time trials on Staten Island last Saturday afternoon, to which the automobiling world has looked forward with eager anticipation for weeks, were brought to a close early in the day by an accident so distressing to the club, to the unfortunate inventor and operator on whom the responsibility rests and to the spectators that a continuance was out of the question. The committee so decided almost instantly.

An electric racing device, to which more extended reference will be made elsewhere—not an automobile in the common understanding of the word but a road locomotive designed for the sole purpose of placing the mile record so low as to be safe from attack; traveling faster, indeed, than the fastest locomotives on rails—plunged into a crowd of spectators with fatal results.

The bare possibility of accident had not been overlooked but it had been anticipated that if anything of the sort occurred it would be to the operator, not to spectators. It is, perhaps, a source of satisfaction to the gentlemen who were responsible for the arrangements that had the rules laid down for the safety of the people been obeyed—had the police who were entrusted with the duty of protecting the people from their own folly been fully awake to the responsibility the accident could not have happened for the club had determined to allow spectators on one side of the road only. The object was two fold; first, to give the contestants so clear a view, and such confidence in the safety of the course, as to relieve them of the slightest worry, and second to give them an opportunity, should an accident occur, to take advantage of the wide, open space on the left side of the road. But the people were insistent and the police unable to handle so vast a crowd. The people walked across the road in spite of them.

Long before this issue of MOTOR AGE reaches its readers full details, accompanied, no doubt, by gross exaggeration will have been given to the public. Repetition of them will therefore be of little interest and of no use. It is greatly to be desired that the automobile papers leave to the yellow press discussion of the sensational details. The authorities of Staten Island will endeavor to locate the responsibility but it was one of those unfortunate occurrences which could not have been prevented by any precaution under the control of the promoters.

Last year a machine made by the Riker company made a record so far ahead of all previously made as to be almost beyond belief. This year the Baker company undertook to do better. It placed the operators in a shell. The whole machine was within 44 inches of the ground. It was a scientific study in the art of avoiding wind resistance. Its performance, so far as it went, indicated that it would eclipse every time previously recorded.

From the outside nothing was visible but the wheels and the shell. The wheels were covered with oilcloth, or something similar, so that not even the rims were visible. The casing of the vehicle was made of arched strips, covered with a light covering of wood, so light, indeed, as to appear almost like canvas. The wheels were 40 inches, with wire spokes and laminated wood rims. The tires were 3½-inch Palmers. At either end of the frame, at points corresponding with the axles, the covering was slotted to allow for the axles, so that the cover ran down to within a few inches of the ground. The batteries were fore and aft, so arranged, apparently, that the weight was directly over the axles.

In the center of the car were two seats, arranged tandem fashion, somewhat resembling canoe seats. The riders were close together, one sitting with his legs around the other's back. Both wore shoulder straps and were practically a part and parcel of the machine. The man in front—Mr. Baker—attended to the steering. The rear rider, Mr. Denzer, attended to the application of power and kept track of the speed of the vehicle by means of a German scientific device, said by those familiar with it to register exactly the speed of the car.

Three nests of Gould batteries containing 40 cells

were used. The motor, made by the Elwell Parker company, was behind the riders. Wheel steering was used. The form of steering gear was later criticised by a number of mechanical men, none of them, however, had been able up to that time to make a sufficiently close examination of details to warrant condemning it. At-

The hospital tent and the nurses.

tached to the steering post was a drum, in which were three V shaped depressions. In and running around these, depending on friction for their operation, were three cables, connecting at right and left with the steering. The wires were kept tight by a spring on each side, whose action was designed to keep the wheels directly in line with the sides of the machine except when turned therefrom by the operator and thus insure a straight course in case he should lose control. The weight of the machine was 3,200 pounds.

Within half an hour after the accident a hundred theories were in the air. The operator had lost his head and control of the vehicle. A wheel had broken and let the machine down on one side. The machine had struck a high spot in the road, jumped into the air and been thrown out of its course. Every man had a theory of his own. Some went so far as to decide that negligence had been shown in allowing a machine so poorly constructed to take the course. Perhaps the best answer to that is that Mr. Baker is a man of unquestioned ability and staked his life, together with that of his superintendent who helped to construct it, on the stability of the machine.

MOTOR AGE men were stationed at the kilometer, at the hotel half way between it and the finish, and at the mile. They are agreed as to what occurred. (See description of course elsewhere.)

The machine passed the turn in the road in safety. As it passed the hotel it was rising and falling fore and aft with a bounding motion. It may be better understood, perhaps, when it is said that the tractive efforts of the driving wheels seemed to lift the rear of the machine with a rhythmic motion, but so fast was it traveling that a couple of such motions were all that it would have been possible to detect before the machine had passed out of sight behind the crowd.

Fifty yards, or thereabout, beyond the hotel the vehicle swerved to the right, perhaps 15 feet from the center of the course. People at the hotel shouted that there had been an accident before the smash actually occurred. It appeared to them as if the machine had plunged into the crowd on the right side of the road, a cloud of dust betokening some untoward happening. No one was touched on that side, however. Then the machine plunged directly across the road, turned completely around so that its nose pointed to the start and came to a standstill at a point about 60 feet further down the road and about 20 feet to the left of the course or some 40 feet to the left of the course taken in its swerve to the right.

Within a few minutes a number of pieces of the rim were found. Stories varied as to their location. People were too perturbed to render intelligible accounts of the exact locations. Some said pieces had been found as far back as the hotel, statements which show the fallacy of believing any but well authenticated stories. The chances are that the pieces were found near the scene of the wreck and certain it is that two pieces shown to a MOTOR AGE man were brought by people coming from that direction. One of them was W. H. Owen.

The accident occurred in the immediate vicinity of the railroad tracks referred to in another part of this report. It cannot be said with certainty that this had anything to do with the smash. Indeed the whole circumstances were so extraordinary that explanation

Mr. Baker (without coat) led down the road by Mr. Goss, after the accident.

is almost impossible. When the machine stopped the wheels on the left side were intact. The wheels on the right side were both broken and it seems the theory of some that the right rear wheel broke first. The natural assumption, however, is that had the wheels alone been at fault the machine, falling on its right

THE ELECTRIC RACER, AFTER THE ACCIDENT.
The front is to the left of the picture, everything on this side being intact. The photograph was taken within three minutes after the stop, the occupants having just left the vehicle.

side, would have turned to the right. The body of the machine, dragging on the ground, would have acted as a brake on that side, while the continued revolution of the wheels on the left would have turned the machine round, using the right side as a pivot. It is impossible to conceive that the machine could have taken the directly opposite course, under these circumstances, without the assistance of some other agency.

Let it be remembered that the machine swerved first to the right. Of that there is no doubt. This may have been due to some inequality in the road. To steer a machine traveling 100 feet a second requires not only consummate nerve but perfect judgment. The turn of the wheel a fraction of an inch meant, providing the steering were perfect, a considerable variation from the course. Mr. Baker found himself headed for a bank of spectators. It is natural that he would have made a superhuman attempt, almost without realization of the effort, to turn the machine away from them and on to the open road. There was a slight rise from the position in which he was to the position he desired to reach. Is it not a reasonable theory that, in the instantaneous effort to right himself, he turned the machine too abruptly, lost control and found himself on the other side of the road before he had any realization of what had happened?

It has been asserted, with what truth is not known, that the instrument attached to the machine indicated a speed of a mile in 47 seconds. Assuming that the machine traveled 300 feet after the operator lost control—and it certainly traveled no further—the operator would have had less time than one second to realize the loss of control, to regain it and place his machine in the middle of the road. Obviously the performance of such a feat would be an impossibility. The machine once astray, as it certainly was, or it would

never have been off the center—could not possibly have been diverted from the path it had taken, except by a gradual turn of the steering apparatus. It would be possible for some of our scientific friends to ascertain exactly what the possibilities are, in a case of this kind. If an investigation is attempted the computation will no doubt be made.

It may be taken for granted that no reports of the causes of the accident are based on anything more stable than surmise. At a guess, but after careful inquiry, we should be inclined to hazard the opinion that the operator lost control; that the machine in his attempt to guide it left the ground, as others did during the afternoon and as they always will until racing automobiles are run on an absolutely level road; that the machine landed with its side slightly toward the finishing line and that the force of impact of 3,200 pounds traveling at 60 miles an hour tore the tire from one of the wheels, causing an immediate collapse of the rim. The theory finds support in a number of accidents to racing motor cycles on circular tracks, one of which resulted fatally to John Nelson last summer. We are clearly of the opinion that had the course been as near perfect as it should have been for such speed, the accident would not have occurred.

The escape of the operators of the vehicle was generally considered miraculous. They probably owe their safety to the precautions taken of strapping themselves to the frame. The machine was not, so far as could be ascertained, seriously hurt in any of its interior mechanism. The operators crawled out without assistance. As Mr. Baker was led to the point where his frightened wife stood, assured her of his safety and kissed her, the crowd expressed its satisfaction over his escape by cheering lustily.

An unfortunate fact is that the police, in moving the machine, damaged and displaced a portion of the steering apparatus. Happily this is admitted by the police themselves.

The accident was the subject of inquiry by the coroner's jury on Monday, resulting in a complete exoneration of Messrs. Baker and Denzer.

During the first hour or two of the morning the police were very active in keeping the course clear. About 500 yards back of the start a temporary fence was erected across the road and all roads crossing the track were roped off. No vehicle other than that entered for the contest was allowed beyond these barriers. As the morning advanced the police relaxed their efforts with the result that the scheme to keep spectators at one side of the track fell through, and for the last quarter of a mile the racing vehicles passed through a narrow lane of spectators. Several complaints were made before the accident over the crowding on the track at a point near where the accident happened. It was noticed from the finishing post, that, in nearly every trial, as soon as the cautionary bell rang announcing the approach of a vehicle, a policeman stationed near the trolley track stepped out into the road to see what was coming. Immediately he did so the people behind him followed, with the result that, looking from the end of the course, a curve in the otherwise straight line of spectators was apparent at that point. The accident occurred at this spot.

BAKER'S CONFIDENCE IN HIS MACHINE

Its Speed Possibilities and Safety of Operators Were Beyond Question in his Opinion

Last Thursday two MOTOR AGE men went down to Staten Island on the same boat on which Messrs. Baker and Denzer were taking their racing machine to the course. The big beetle-like automobile was carried on a horse-drawn wagon and both the chauffeurs were in a Baker runabout. Mr. Baker spoke of his machine with the utmost confidence. He said no expense had been spared to make it as perfect a piece of electrical mechanism as could be produced. Everything had been figured with the utmost care. As to the speed he said that all depended on the condition of the road, but from what he had heard he did not think it was smooth enough to permit him to run the machine at its full power. That he would beat the existing record for electric machines he said he was certain and this, notwithstanding the fact that he only carried one 7-horsepower motor, while the machine which made the record had two 10-horsepower motors. He said the racer had been built to demonstrate the perfect application of power generated by the batteries and that every detail had been studied and worked over for months. It had been tested on the road up to a speed of 48 miles an hour. Mr. Baker scorned the idea of danger to the operators, saying they were perfectly protected, as indeed, proved to be the case. Mr. Baker was naturally proud of his production and confident of its accomplishing the purpose it had been built for. The next time the writer saw Mr. Baker was immediately after the accident when, hatless and coatless, and ashy pale, he was led up the track by Mr. Goss to assure his wife he had not been hurt. The first thing each of the occupants of the vehicle did, after leaving it, was to inquire after the safety of the other.

THE HISTORY OF SPEED TRIALS

First, Held on Long Island, Inspired A. C. A.—Efforts of a Capable Committee

The first straightaway trials ever promoted in America and, so far as we have record, the first in the world, were those given by the Long Island Club last year. They took place on Coney Island, over a road as straight and smooth as any in the United States. The times made speak eloquently of the course provided by the Long Islanders. Then, as last Saturday, the owners of high-powered machines and the trade spared no effort to establish such records as should be creditable to the industry and that they succeeded is proved by the fact that the records then made have not been approached in the meantime.

The success of this event, no doubt, prompted the Automobile Club of America, to hold similar trials

and its enterprise was rewarded by an entry which led to the belief that the events would eclipse those of last year. Even the machine on which Fournier made the mile record of the world was there, though the French celebrity was absent in his native land. It had been an open secret for some days that several of the makers had prepared special vehicles, notably a new steamer of the Locomobile company, another steamer which was to have been operated by L. D. Munger, of the Munger Tire Co., and the Baker electric. Mr. Riker, too, was known to have been at work on a new gasoline machine, but it had failed to put in an appearance up to the time the trials occurred.

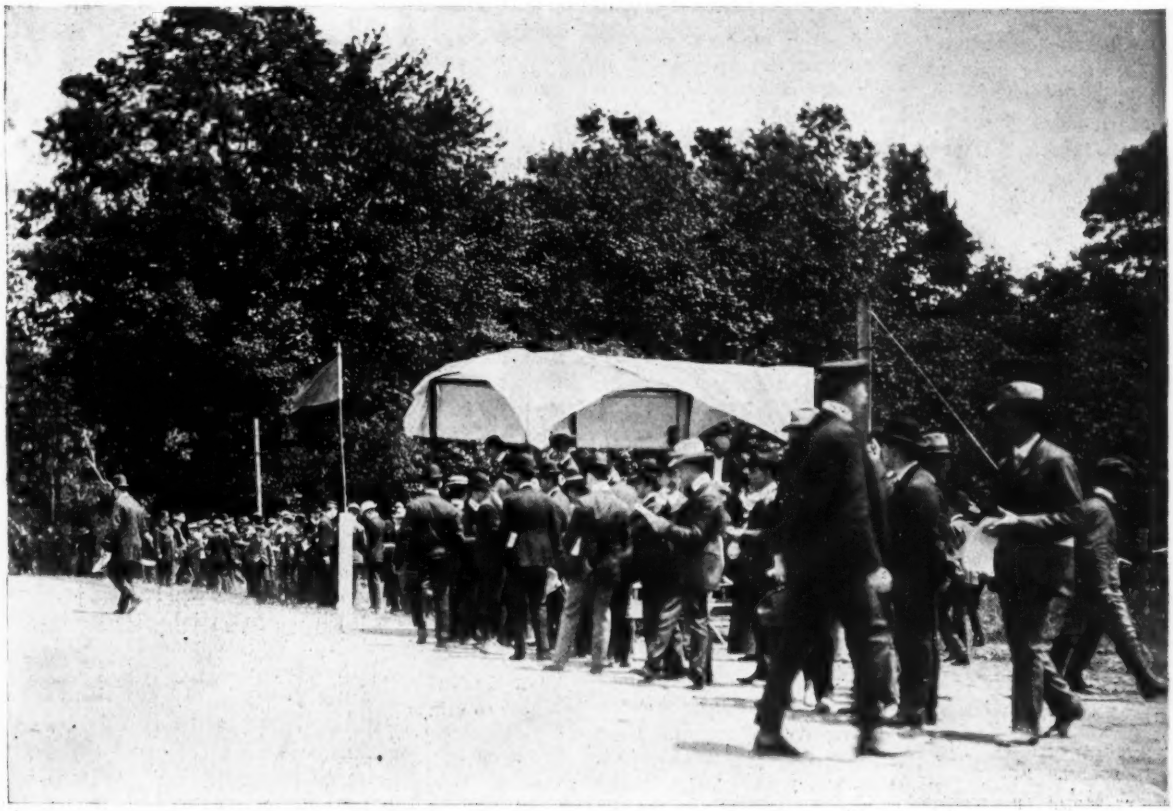
The management had been placed in the hands of the following committee: Dave H. Morris, chairman; George Isham Scott, William Henry Hall and J. M. Hill. This committee was appointed shortly after the trials were announced and before there was any idea of what suitable course would be selected over which permission could be obtained to run them. A civil engineer, Henry S. Opdyke, was at once retained to search for a suitable straightaway accessible to New York and if possible within the metropolitan district. Long Island, with existing strong anti-automobile phobia, was out of the question. A straightaway near Southport, Conn., was also considered. Then came the discovery of the Staten Island course finally adopted. In convenience of access, comparative freedom from traffic, in surface and in grade it seemed the best straightaway available.

Permission for the trials was next to be obtained. It was at first supposed that the consent of the president of the borough of Richmond would have to be obtained. The corporation counsel, however, was consulted and gave as his opinion that the board of aldermen had the power to suspend the speed ordinance at its discretion. This was the cue followed. The club had made a most favorable impression as a law-abiding organization by issuing a circular letter to its members urging them to observe the restricted 8-mile an hour speed limit within the city's confines. Quietly and without fuss the matter was brought before the aldermen, who surprised every one by liberally suspending the speed ordinance on that road for that day and giving the club complete control of it for its trials. Preparations then began in earnest and with a most commendable attention to every detail that could add to the success and safe conduct of the trials.

THE COURSE WAS NOT PERFECT

A Kink at the Kilometer, Rough Surface and Insufficient Width Made it Unsafe

The course chosen was the Southfield boulevard, Staten Island. It began at a point opposite the Dongan Hills station of the Rapid Transit railroad and ran



THE TIMING STAND AT THE FINISH OF THE MILE.
The poor work of the police is shown by the crowd, instructions having been given to keep that side of the road clear of spectators.

south to a point about a quarter of a mile beyond the Midland Beach trolley tracks, which cross the boulevard. Beyond the mile finish post was a half mile straightaway for slowing down. There was a straightaway of the same distance leading to the starting line for getting up speed for a flying start.

The stretch from the starting line to the kilometer timing stand was dead straightaway. At that point the road swung to the left at an angle that seemed in the survey map infinitesimal, but was so marked from a viewpoint down toward the finish that the approaching vehicles could not be seen from the stand at the finish until they had actually rounded it. At this point the macadam strip in the center of the road had been widened so that it reached from side to side and gave the racers every chance to cut the turn with as little loss as possible. The turn once rounded there was a straightaway to the mile timing stand. Just beyond the turn was Ebberle's Hotel, and 50 yards beyond there Washington avenue entered the boulevard at a right angle. Less than 200 yards further on the road crossed the trolley tracks and ran uninterruptedly a quarter of a mile to the finish.

With its turn eliminated as a possible reason for complaint the surface of the road alone prevented its being an ideal race course. In the center was a slightly arched belt of quasi-macadam with the ordinarily surfaced though smooth country road on either side. Its condition and surface were far from those of a park macadam. The road looked as if it might have been hastily constructed on top of an ordinary country road with the omission of most of the fine points of construction necessary to produce a macadam up to modern ideas of perfection. It needed a finer screened surface and a heavier roller. It needed weight and water to make of it that ringing surface characteristic of macadamized roads of the highest order. The club had, however, worked on it for a week and done all that could be done for it without rebuilding or resurfacing, yet stones protruded sufficiently to cause a racer at mile a minute speed to jump. The engineer said there was a rise of but 1 foot in the mile, as against 9 feet on the Coney Island course. To the spectator it seemed, barring a perceptible dip at the trolley tracks, dead level. The racers, however, spoke of hills they went down and "thank-you-marms" that they jumped. Where the road crossed the trolley tracks the road had been carefully leveled even with the tops of the rails. Still there was a perceptible jump as the machines crossed the tracks. More than that, there was a perceptible dip from Washington street 200 yards before the tracks were reached to the tracks themselves that was remarked by spectators and spoken of in exaggerated terms by those that went over it in the trials.

The course in its beginning ran by the old Commodore Vanderbilt farm. There was not a house on either side until after the kilometer turn was passed. Then came Ebberle's Hotel on the left and the Boulevard Hotel on the right just before the trolley tracks were reached. Up to the kilometer turn the road ran through open country with Midland Beach and New York bay a mile away to the left. Beyond the Boulevard Hotel were thick woods on the right to within 50 yards of the mile timing stand.

THE ARRANGEMENTS WERE PERFECTION

System of Bells, Flags and Ropes for Protection—Timing and Every Detail Satisfactory

So far as warning of the approach of vehicles was concerned the provisions were ample and splendidly fulfilled. About a furlong before the starting turn was reached a man was stationed with a white flag. The racers took all the distance they desired in which to get up headway. Some got sufficient speed in 200 yards. As a racer passed the white flag it was dropped as a warning that a racer was coming. Up went a red flag at the start and remained up until notification was received from the finish that the racer had passed and that the course was free. Until the red flag was lowered no vehicle was allowed to go on the course.

As the racer crossed the starting line electric gongs at the kilometer and mile stands, whose clanging could be heard all along the course, were set ringing, announcing that a contestant was approaching. His number was also phoned to the two timing stands. At the kilometer stood another man with a red flag which he waved until informed that the vehicle had passed the finish and left the course.

By way of safety precaution a line of posts and rope on the right side of the course skirted the macadam strip from the Boulevard Hotel to the finish, a quarter of a mile away. Between this barrier and the fence there was ample room for spectators and also for wagons and automobiles to pass or take their stand by the ropes. There were in all, Chairman Norris told a MOTOR AGE man, 190 patrolmen, bicycle and mounted police on duty. They seemed to be stationed every few feet. The idea was to keep the crowd behind the ropes and the left side of the road clear. The crowd, however, was too large to be kept back, and soon after the trials began there was a fringe of spectators on both sides of the road. At the trolley tracks there was much crossing of the road, and at other points irrepressible small boys ran across. The sight of them ahead bothered the racers some. The posts and ropes ended in front of the mile stand and here the spectators pressed in on the road most dangerously and made of that point a risky spot as was frequently remarked.

After the racers passed the stand they kept on, swung to the right and crossed a half mile further down to the Richmond road and returned by it to the starting point for their second trial. Only one contestant violated this rule and he made his way back in the road behind the ropes.

It is said that contestants were warned should they get into difficulties to swing off the road to the left into the open field or the woods, so as to avoid the spectators on the right. It was assumed that the left side of the course would be kept clear. The committee had reckoned well and the 190 policemen that had been

assigned to duty on the course did their best, but were not in sufficient numbers for the long stretch of road and the great throng of spectators.

The timing was in charge of Charles J. Dieges at the mile stand and of John A. Boyle at the kilometer post. Both were veteran sprinting timers of long experience and needed no assistance or instructions. Credit for the accurate and satisfactory taking of the time is due

Mrs. Howard Gould's Daimler.

to them entirely. The club is to be congratulated that these gentlemen volunteered their services and assured an unquestioned acceptance of the times announced both by the press and racing experts generally. In this connection it is to be noted with thankfulness and commendation that Mr. Morris, chairman of the committee, who was at the mile stand, left the timing to the timers and devoted all his spare moments looking after the news detail requests of the pressmen. This was only to be expected, however, of the popular and successful head of a much larger racing game than the speeding of automobiles has yet become. As soon as the timer announced the time it was run up on a big running track score board and quickly passed down the line of spectators by word of mouth to those too far away to see the large figures posted.

The timing was done by Mors' automatic electric timing machines at the mile and kilometer posts. Foreigners are well acquainted with them, and Americans were informed of their construction and operative details by MOTOR AGE when they were first used here in the recent stopping tests on Riverside Drive.

As an extreme precautionary measure an emergency hospital tent was established by the club at the side of the road halfway up the course. It was in charge of four physicians and two trained nurses.

Details of boats, trains, trolley lines and roads were given great preliminary publicity. MOTOR AGE supplemented these press and circular data with arrows along the road to be taken from the ferry at St. George to the course at Grant City.

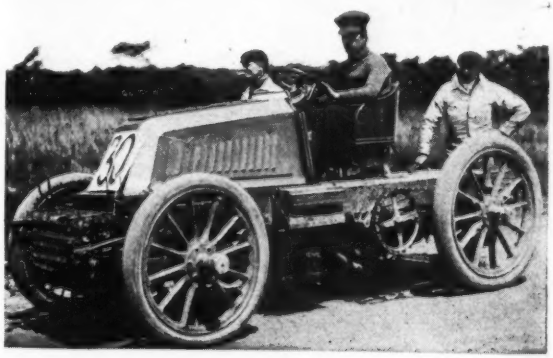
SCENES BEFORE THE START

People Came in Thousands and Created an Animated Scene All Along the Course

American automobile speed history was to be made on that gently curved, mile long bow of road on Staten Island and the second chapter of American motor vehicle straightaway record racing was to be written on Saturday, May 31, 1902. Its birth had been on the Ocean Parkway, Brooklyn, and its genesis had been recorded on November 16, 1901.

The morning dawned full of sunshine and calm and promise. Broadway, Brooklyn Bridge, the Hudson County boulevard and the highway leading to Elizabethport became automobile roads for the day for the motor vehicle communities awheel of New York, Long Island, Jersey City and the Jersey riding district in reach of the ferry across the Arthur kill. On Staten Island the four caravans met and all roads led to Grant City.

Unmounted automobilists and motor vehicle speeding enthusiasts from the sport loving population at large were numerously in evidence on boats, trains and trolleys among the thousands who sought mere novelty and sensation in the trials. Richmond county folk, farmers' families and rosy-cheeked country lassies in



Fournier's Mors, Operated by Fred Walsh.

buggies and carriages mingled on the island roads with the swells of the country club colony in their fashionable traps all race-bound and all impelled by a common speed-loving eagerness to see an automobile travel a mile-a-minute.

The race-going throng once arrived at the course found the busy committeemen scurrying up and down it in C-marked red-flagged motor vehicles. There were a half a dozen of these official craft from a ponderous bus to a saucy runabout. Officials and committeemen wore colored bands lettered in gold on their left arms.

An hour before the start there were a thousand vis-

itors along the course and the laborers were stretching the guard rope along the posts. Timing officials and newspaper men were among the early birds gathered at the finish. Charley Dieges was testing the new apparatus and comparing watches by telephone with Jack Boyle down at the kilometer stand.

Already the automobile-mounted contingent had begun to arrive with vehicles invariably partly laden with ladies in the gay colored attire characteristic of this spring's fashion, and was taking up favorable positions inside the ropes beginning at the finishing line. Before the first round of trials had been run there were fully twenty of these automobile reviewing stands in line. They extended down the course nearly to the trolley tracks a quarter of a mile away.

At the starting point the racers were assembling, circling about or receiving their final tinkering before being sent away for record and for glory. A group of uniformed soldiers lolled on the roadside and gave a touch of color to the scene. Across the bare meadows loomed up the great caravansaries at Midland Beach, where the big observation wheel revolved and little specks dashed up and down the chutes and disappeared in the osculation tunnels. Beyond the wavelets of the gently stirred bay sparkled in the sunlight. All entering lanes and roads at the lower end of the course had been shut off by fences, so that only a wandering official or a stray intruder furnished actual life to the picture, when the committee cars and the bicycle cops were not scurrying by.

Thomas A. Edison, perhaps to be known in automobiling hereafter as the battery wizard; Winthrop E. Scarritt, president of the American Automobile Association; H. W. Whipple, R. P. Scott and others prominent in the motor world were among the throng that crowded the veranda of the Boulevard Hotel, the headquarters of the Automobile Club of America that day.

Beyond the hotel and clear to the finish there was a great crowd along the ropes with a considerable overflow

Jefferson Seligman's Mors.

across the road. Just beyond the trolley tracks both sides of the course were crowded.

Ten minutes before 11 o'clock, the time announced for the start, the police began to clear the course, and when that hour arrived there was not a sign of life animate or inanimate along that mile of brown bordered gray ribbon of macadam. The crowd saw that there was to be something doing in a minute or two

Mr. Davis and His Locomobile Racer.

and waited eagerly and somewhat awefully for something to happen.

In less than five minutes came the clanging of the gongs, and all eyes were turned down the course. Thirty seconds passed and then there was a puff of dust at the turn, from which a low-lying, fast-flying object emerged diminutive in perspective. Thirty seconds more of gaping gaze at the approaching flyer, and Mr. Thompson's little Renault, stripped to the deck, flashed by.

The trials were on.

PERFORMANCE OF THE VEHICLES

Mors, Locomobile, Winton and Orient Motor Bicycle Win the Honors and Break Records in Their Classes

"Just 11 o'clock by my watch," said Dave Hennen Morris, chairman of the committee, as he put away his repeater before the clanging of the gong announcing that a racer was on its way had ceased. The trials had been started on time to the minute, thanks to the promptness of J. M. Hill, of the committee, who was in charge at the start.

L. S. Thompson's little Renault (8 h. p., 820 lb.) flashed by a few seconds later. The timer announced 1:54 1-5—not a very encouraging opening of a record breaking day. Ward Leonard's Knickerbocker (8 h. p., 900 lbs.), Mr. Leonard's company's Knickerbocker (4½ h. p., 900 lbs.), and Lewis Nixon's newly designed Long Distance (7 h. p., 1,000 lbs.) went by at less than five minute intervals in time not much faster. Mr. Nixon's 1:48 was the best score. This completed the first round of the little fellows.

Now came the middleweights, Ernest Cuenod's Rochet-Schneider (16 h. p., 1,730 lbs.), which so easily

won the Roslyn Hill climb, started this class going in better style and in faster and more encouraging time. It was unstripped, yet it scored 1:22 4-5. This broke Percy Owen's American record of 1:53 2-5, made on a Winton at the Coney Island trials. Jefferson Seligman's Mors (12 h. p., 1,950 lbs.) followed in 1:33 4-5. Next came Percy Owen's Winton (15 h. p., 1,925 lbs.). Everybody wished Owen, who drove the machine himself, well, and thought his American racer had a good chance of winning in its class. That it scored but 1:25 was a disappointment. There were second trials to come, however. These were merely warming up spins. F. A. La Roche's Darracq (16 h. p., 1,320 lbs.), driven by himself, covered the cours in 1:44. Here ended the first round of the gasoline middleweights.

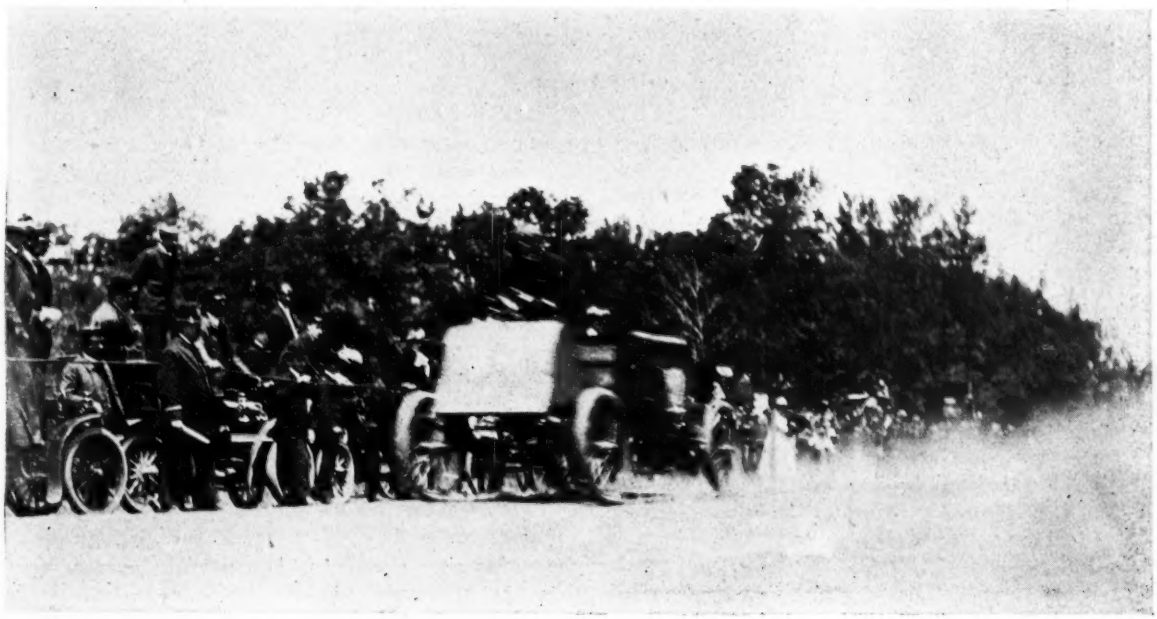
A long, low rakish looking craft now rushed and bounded toward the line. As it neared the mark there was no mistaking its identity. The rusty, shabby thing, which was as weatherbeaten and roadstained as when it was shown at Chicago, was Fournier's famous world's record holding Mors (40 h. p., 3,240 lb.). Freddy Walsh, an American daredevil chauffeur, lay back in it just as Fournier did the day it scored :51 4-5 and the world's record at Coney Island. Despite the course, its turn, the poor roadbed and the fact that the first trial was only a warming up spin, the time announced was :55 1-5. The veteran was, indeed, making good time, and its entrants, Messrs. Britton & Levy, a pair of good sportsmen, were rewarded for their sportmanship in having Fred Walsh tune the famous car up and drive it in the race.

The other big fellows that were started proved, for the most part, disappointments. Vanderbilt's famous "Red Devil" Daimler (35 h. p., 2,575 lbs.), made the mile in only 2:26 4-5. William Guggenheim's Panhard (24 h. p., 2,508 lbs.), of which great stories were told, did well for a first trial and promised far better for the second. Its time was 1:11. E. E. Britton ran his Panhard (16 h. p., 2,730 lbs.), over the course himself "just for the fun of a scorch without being gathered in by a cop." as he put it. Its tonneau was on, and yet it scored 1:36 4-5 very handily. Mrs. Howard Gould's Mercedes (35 h. p., 3,240 lbs.), driven by a chauffeur, got in trouble on the way and was timed in 3:18 1-5, though it is hardly fair to quote figures under the circumstances.

Harry Wells, with his unstripped high backed Prescott (4½ h. p.) steamer, covered his mile in 1:37.

Now came a real sensation and a new world's record in its class when C. H. Metz flashed by on his Orient bicycle in 1:10 2-5. He had reached the kilometer post in 43 3-5. There was a slaughtering of records, indeed. Robert Atkins' straightaway 1:35 American record, Albert Champion's 1:12 world's track record, Williams' mile straightaway European and world's record of 1:12 1-5 made at Nice, were wiped out in that one swift dash of Metz' Orient. Only Williams' European and world's kilometer record of 40 3-5 made at Nice, remained.

In the next whirl past the mile post another world's record was to go. S. T. Davis, jr., had discarded his world's mile record holding Locomobile, in which he scored 1:15 at Coney Island, for a new Locomobile (10-h. p.) of his own design. It is a bigger and much more powerful looking racer built along the same lines apparently as the old record breaker. It reached the kilometer pole in 43 3-5, establishing an American steam record at that point, though it failed to come within



S. T. DAVIS, JR., ON A LOCOMOBILE RACER, MAKING A RECORD FOR THE STEAM CLASS OF 1M. 12S.

hailing distance of Serpollet's world's figures of 29 4-5 seconds. It went on, however, and put up new world's mile figures of 1:12. Mr. Davis expressed himself as much disappointed that evening at circumstances preventing a second trial, as he said he understood he was to have three or four chances and only considered the first a warmer-up and a pathfinder.

The last two trials ended the first round. Birdie Munger's Howard steamer was not on hand and the electric torpedo had not as yet been cut loose.

The second round was begun at once. L. S. Thompson's Renault cut his first figures from 1:54 1-5 to 1:35 3-5 for the mile, and from 1:17 to 59 for the kilometer. Though his 1:35 3-5 was the best time in its class it did not touch Jacques Linguez (De Dion) and his 1:27 4-5 American record made at Coney Island, though it of course established an American kilometer record of 59 as against the 35 made by Baras at Nice.

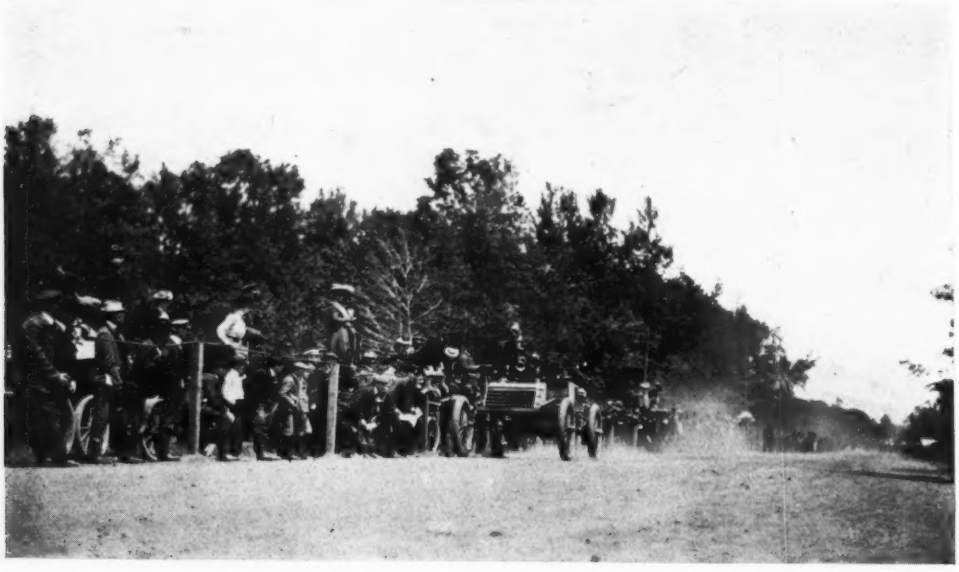
H. Ward Leonard's Knickerbocker cut its time from 1:46 to 1:45, though it fell off from 1:05 1-5 to 1:05 3-5 for the kilometer. Its factory mate tried next and fell away to 2:03 for the mile and to 1:15 2-5 for the kilometer. Lewis Nixon's Long Distance improved its score, shaving its mile from 1:48 to 1:43 3-5 and its kilometer from 1:06 2-5 to 1:03.

In the middleweight class M. Ouenod's Rochet-Schneider fell away from 1:22 2-5 to 1:26 4-5 for the mile; though, strange to say, it improved its kilometer score from 56 3-5 to 53 2-5. On its second attempt Mr. Seligman's Mors cut its former figures slightly, the mile from 1:33 4-5 to 1:32 3-5, and the kilometer from 57 4-5 to 57 1-5.

When it was phoned that "No. 15," which was Percy Owen and his Winton, had started, there was much interest of a patriotic order manifested. It was up to Owen's American to beat Cuenod's foreigner. The American machine and man did the trick so neatly that the hearts of the spectators swelled with pride. Owen scored 1:17 3-5 for the mile and 47 for the kilometer, both American records wiping out those held by the Rochet-Schneider for a brief half hour. Owen's 1:17 3-5 is not so very far behind the 1:10 2-5 made by Baras in his Darracq, which is world's record, though the American's 47 for the kilometer is hardly to be compared with the great Jenatsky's 35 2-5.

F. A. La Roche's Darracq cut its former figures from 1:44 to 1:40 for the mile and from 1:03 4-5 to 1:02 3-5 for the kilometer.

The Baker Motor Vehicle Co.'s electric had reached the kilometer post in 36 1-5 before the accident occurred which caused the stewards to call off the trials. This was at the rate of a fraction over 58 seconds for the mile as against the Riker record of 1:03. Mr. Denzer, who managed the motor of the torpedo, said that the indicator showed 47 seconds to the mile after the turn was rounded and before the power was shut off. The machine had used only twenty-five of its forty cells.



PERCY OWEN, MAKING A NEW CLASS 4 RECORD ON A WINTON.

HYSTERIA WISELY SUPPRESSED

Meetings of Three Associations Take Philosophical View—No More Road Races by A. C. A.

New York, June 3.—(Special telegram.)—There seemed for a time to be danger that the automobile club and manufacturers' association would take action relative to the late accident which would do as much to injure the sport as the accident itself, but now that the momentary excitement has subsided, better judgment has prevailed. There were meetings today of the Automobile Club of America, which promoted the event, the American Automobile Association, under

whose rules it was held, and the National Association of Automobile Manufacturers, whose members, among whom is Mr. Baker's company, took part. All wisely refrained from radical action. The club directors adopted the following resolution:

Whereas, the Automobile Club of America deeply regrets and deplores the terrible accident which occurred during the holding of the record trials by this club on Staten Island, on May 31 last;

Resolved, That although similar trials have been heretofore held throughout the world without serious accident, yet this accident upon Saturday, notwithstanding every safeguard that precaution could suggest was adopted, has convinced the governors of the club that it is unwise to hold speed trials with automobiles on the public highways, and that the governors of the club will not hold or consent to the holding of such contests by the club.

The gentlemen present at the meeting were Messrs. Seligman, Morris, Ripley, Hill, Scarritt, Chamberlain and Hall. After the meeting the president, who was seen by a MOTOR AGE man, said that opposition to all racing, on road and track, which had been declared by the daily papers to be rampant in the club, probably did not extend beyond a very small minority of the members. President Scarritt, of the A. A. A., called attention to the fact that no sport is free from accident and deprecated the condemnation of automobile racing because of the unfortunate affair of Saturday. Mr. Scarritt strongly favors pushing the proposed private Long Island road to completion and the erection of safe stands for spectators. At the meeting of the association no action was taken beyond giving the stewards of race meetings the power to exclude machines which they deem unsafe.

The manufacturers' association met but announced no action and gave out no information. Preparations are being made for the race meeting of the Long Island club, at Brighton Beach, on Aug. 23.

ENTRANT.	Vehicle.	Weight.	H.P.	FIRST TRIAL Mile. M. S.	FIRST TRIAL Kilometer. M. S.	SECOND TRIAL Mile. M. S.	SECOND TRIAL Kilometer. M. S.
Class 1—Motor Bicycles.							
C. H. Metz	Orient	....	3¼	1 10 2-5	0 43 3-5	.....	.....
Class 3—Gasoline under 1,000 pounds.							
L. S. Thompson	Renault	820	8	1 54 1-5	1 17	1 35 3-5	0 59
H. Ward Leonard	Knickerbocker	900	8	1 46	1 05 1-5	1 45	1 05 3-5
Ward Leonard Electric Co	Knickerbocker	970	4½	1 58	1 07 3-5	2 03	1 15 2-5
Lewis Nixon	Long Distance	1,000	7	1 48	1 06 2-5	1 43 3-5	1 03
Class 4—Gasoline, 1,000 to 2,000 pounds.							
Ernest Cuenod	Rochet-Schneider	1,730	16	1 22 4-5	56 3-5	1 26 4-5	53 2-5
Jefferson Seligman	Mors	1,950	12	1 33 4-5	57 4-5	1 32 3-5	57 1-5
Percy Owen	Winton	1,925	15	1 25	52 3-5	1 17 3-5	47
F. A. La Roche	Darracq	1,320	16	1 44	1 03 4-5	1 40	1 03 3-5
Class 5—Gasoline, over 2,000 pounds.							
H. H. Rogers, Jr.	Daimler	2,575	35	2 26 4-5	1 10	.....	.....
William Guggenheim	Panhard	2,580	24	1 11	44	.....	.....
E. E. Britton	Panhard	2,730	16	1 36 4-5	59 3-5	.....	.....
Britton & Levy	Mors	3,240	40	55 1-5	34 4-5	.....	.....
Class 6—Steam.							
S. T. Davis, Jr.	Locomobile	....	10	1 12	46 1-5	.....	.....
H. M. Wells	Prescott	....	4½	1 37 1-5	1 01 1-5	.....	.....
Class 7—Electric.							
Baker M. V. Co	Baker	3,200	..	.....	36 1-5	.....	.....

Best Time Scored for Mile in Each Class

Class.	Entrant and Vehicle.	Time. M.	S.
Motor bicycles	C. H. Metz (Orient)	1	10 2-5
Gasoline under 1,000 lbs.	L. O. Thompson (Renault)	1	35 3-5
Gasoline, 1,000 to 2,000 lb.	Percy Owen (Winton)	1	17 3-5
Gasoline, over 2,000 lbs.	Britton & Levy (Mors)		55 1-5
Steam	S. T. Davis, Jr. (Locomobile)	1	12

Best Time Scored for Kilometer in Each Class

Class.	Entrant and Vehicle.	Time. Seconds.
Motor bicycles	C. H. Metz (Orient)	43 3-5
Gasoline, under 1,000 lbs.	L. S. Thompson (Renault)	59
Gasoline, 1,000 to 2,000 lbs.	Percy Owen (Winton)	47
Gasoline, over 2,000 lbs.	Britton & Levy (Mors)	34 4-5
Steam	S. T. Davis, Jr. (Locomobile)	46 1-5

The Old Record Table

MOTOR BICYCLES.

American mile record, 1:35; by Robert Atkins, Nov. 16, 1901.
American mile track, 1:12; by Albert Champion.
European mile record, 1:12 1-5; by M. Williams, Nice.
European kilometer record, 0:40 3-5; by M. Williams, Nice.

GASOLINE MACHINES UNDER 1,000 POUNDS.

American mile record, 1:27 3-5; Jacques Longuez (De Dion), Nov. 16, 1901.
European mile record, 1:27 4-5; Guillaume, Nice (Darracq).
European kilometer record, 0:35 1-5; Baras, Nice (Darracq).

GASOLINE VEHICLES BETWEEN 1,000 AND 2,000 POUNDS.

American mile record, 1:53 2-5; Percy Owen (Winton), Nov. 16, 1901.
European mile record, 1:10 4-5; Baras (Darracq).
European kilometer record, 0:35 2-5; Jenatzky (Jenatzky).

GASOLINE VEHICLES OVER 2,000 POUNDS.

American and world's mile record, 0:51 4-5; Henri Fournier (Mors), Nov. 16, 1901.
European mile record, 1:09 3-5; Degrais (Mercedes), Nice.
European kilometer record, 0:32 2-5; W. K. Vanderbilt, Jr. (Mercedes), nr. Paris.

STEAM VEHICLES.

American world's mile record, 1:15; S. T. Davis, Jr. (Locomobile), Nov. 16, 1901.
European kilometer record, 0:29 4-5; Serpollet (Serpollet). Nice.

ELECTRIC VEHICLES.

Amercian and world's mile record, 1:03; A. L. Riker (Riker), Nov. 16, 1901.

The New Record Table

MOTOR BICYCLES.

*American mile record. 1:10 2-5; C. M. Metz (Orient), May 31, 1902.
*American mile track, 1:12; Albert Champion (Aster), Vailsburg.
European mile record, 1:12 1-5; Williams, Nice.
*European kilometer record, 0:40 3-5; Williams, Nice.
American kilometer record, 0:43 3-5; C. H. Metz (Orient), May 31, 1902.

GASOLINE VEHICLES UNDER 1,000 POUNDS.

*American mile record, 1:27 3-5; Jacques Longues (De Dion), Nov. 16, 1901.
European mile record, 1:27 4-5; Guillaume (Darracq), Nice.
*European kilometer record, 0:35 1-5; Baras (Darracq), nault), May 31, 1902.

*European kilometer record, 0:35 1-5; Barus (Darracq), Nice.

GASOLINE VEHICLES FROM 1,000 TO 2,000 POUNDS.

American mile record, 1:17 3-5; Percy Owen (Winton), May 31, 1902.
*European mile record, 1:10 4-5; Baras (Darracq).
American kilometer record, 0:47; Percy Owen (Winton), May 31, 1902.
*European kilometer record. 0:35 2-5; Jenatzky (Jenatzky).

GASOLINE VEHICLES OVER 2,000 POUNDS.

*American mile record, 0:51 4-5; Fournier (Mors), Nov. 16, 1901.
European mile record, 1:09 3-5; Degrais (Mercedes), Nice.
American kilometer record, 0:34 4-5; Fred Walsh (Mors), May 31, 1902.
*European kilometer record, 0:32 2-5; W. K. Vanderbilt, Jr. (Mercedes).

STEAM VEHICLES.

*American mile record, 1:12; S. T. Davis, Jr. (Locomobile), May 31, 1902.
*European kilometer record, 0:29 4-5; Serpollet (Serpollet).
American kilometer record, 0:46 1-5; S. T. Davis, Jr. (Locomobile), May 31, 1902.

ELECTRIC VEHICLES.

*American mile record, 1:03; A. L. Riker (Riker), Nov. 16, 1901.
*American kilometer record, 0:36 1-5; Baker & Denzer, May 31, 1902.
*World's record.

CLEVELAND CLUB PLANS RACES

To Occur in July on Mile Track—Club's Annual Meeting and Election

Cleveland, O., June 2.—The Cleveland Automobile Club held its annual banquet and election at the Euclid Club Friday. E. Shreiver Reese was chosen president; George L. Weiss, vice president; George Collister, secretary, and Windsor T. White, treasurer. The board of directors is made up of Messrs. Reese, Weiss, White, E. L. Strong, Thomas Henderson, Chas. B. Shanks, E. E. Shire, J. Harkness Brown and James Moore, with Mr. Strong, the former president, as chairman. The club has a membership of sixty and is growing rapidly, the initiation fees and dues having recently been reduced to draw in new members. Messrs. Shanks and Collister, who are a committee on race meets. reported that the first meet ever held in Cleveland will take place some time in July on Glennville mile track. The committee is arranging to secure the entries of some of the big eastern racers.

Milwaukee Club Starts With Large Membership

Milwaukee, Wis., June 3.—Milwaukee automobilists have organized the Milwaukee Automobile Club. The final organization of the club was completed last night at a meeting at the St. Charles hotel. The following officers were elected: President, Dr. Ralph Elmergreen; vice president, F. P. Rugee; secretary, C. G. Norton; treasurer, Frederick Pollworth.

John Brennan and Dr. Sayles were elected trustees and a committee consisting of Charles R. Davis, F. C. Courtney and D. Gillen was appointed to revise the constitution and by-laws, which were adopted last night. Committees will be appointed at the next meeting, June 26, whose duties will be to promote good road legislation for the operators of the horseless carriages and arrange for club runs and races.

The meeting last night was an enthusiastic one and augurs well for the success of the club. The officers were pleased with the large attendance. Those present at the meeting were: T. Jones, F. C. Courtney, H. E. Collins, E. C. Waite, J. H. Moss, J. L. Williamson, C. H. Lemon, I. O. Newell, J. N. Rock, W. H. Pipkorn, F. W. Upham, Walter Bush, Beyer, J. L. Kuntz, F. H. Strauss, James Merkel, William Merkel, Charles Chase, C. G. Norton, J. H. Smith, Fred Bredel, Dr. Ralph Elmergreen, Charles Haase, E. G. Warner, Johnson, John Brennan, Fred P. Rugee, E. H. Bottom, Frederick Pollworth, L. J. Dorsch, Charles R. Davis, F. C. Gillen, Dr. H. Cohn, Eugene H. Wuesthoff.

Profit by This Man's Experience

There seems to be a splendid demand for machines in the Fox River (Ill.) valley, where the roads are generally excellent. Mr. Fitzgerald, of Aurora, has just received a Rambler, Dr. Milbacher will soon have a Knox and Charles Phillips, who has been operating a Milwaukee, has bought a Buffalo, model 15. A. C. Hall, a MOTOR AGE subscriber at this town, kindly sends details of a recent accident which may be useful as a suggestion. A young man who had built a steam vehicle poured gasoline into the tank through a rubber hose, which slipped and allowed the gasoline to flow under the exhaust valve, which was nearly red hot. A fire resulted, but happily without a great deal of damage.

THE ENDURANCE RUN ON DECORATION DAY

Success crowned the execution of the details of the 100-mile endurance run promoted last Saturday by the Automobile Club of America. Perfect management, embracing foresight and attention to every factor that would conduce to a smooth and satisfactory running of the function, is always to be expected of this club, numbering in its ranks men with money enough to make the expense a secondary consideration. Weather conditions favored a pleasant day's jaunt through a spring-decked landscape.

It is believed, however, that the idea of this short and insufficient test was hastily conceived as an outlet to the club's early-season enthusiasm. Calm consideration of the results of the Long Island run came subsequently and a doubt forced itself to the surface of general automobile opinion as to whether after all such small tests were not insufficient MOTOR AGE has expressed itself frankly on these kindergarten tests before, and this phase of the run need be no further enlarged upon in this review of a well-conducted and most delightful day's run.

The conditions and course presented greater difficulties than had the Long Island run. Instead of graded awards a blue ribbon class alone was established, with a 100 per cent performance as the standard for qualification. It was decided to make it a "stop-and-you're-out" run.

A course through Westchester and up into Connecticut along the shore of Long Island Sound was selected. It began at the clubhouse near Central Park and ran through the Westchester and Connecticut Sound shore towns to Southport, 50 miles distant, where it ended. There was a return over the same course. There were hills, not steep ones as a rule, but continuous, that had to be climbed going and coming, and the results showed that the course, as compared with Long Island, was of a considerably less trifling character.

A portion of the trade at least seemed to have deemed the result attained by their vehicles in the Long Island run to have been satisfactory enough, either by way of test or as an advertising proposition. A scanning of the entries, and more particularly the starters, discloses not only the proportion of strictly trade entries to have been much smaller. A number of successful trade competitors in the earlier run, including such notable makers as Winton and Olds, were absent.

There was, however, a very general representation of American makes and a much larger proportion of foreign machines than were included among the starters in the event promoted by the hustling club across the East River. A majority of the vehicles were entered and driven by individuals. The members naturally supported the enterprise of their club loyally.

The strictest speed limits conforming with the legal

THE COMPETING CARRIAGES READY FOR THE START.

restrictions of the states and towns through which the run was to pass were established. The recent suspension of two of the members for offenses in this direction showed that the governors' warnings actually meant something. The contestants arrived at all the controls and at the finish close together and those that reached any point in the lead did so more from an ability to calculate speed more closely than from the possession of any greater supply of that commodity in their vehicles.

The start was opposite the club rooms from the corner

A Haynes-Apperson Entry.

of Fifth avenue and Fifty-eighth street. The vehicles entered the latter from the east and took their places in the order of their arrival. They were sent away in this order as quickly as possible, a few together at the start and at no greater interval than 15 seconds later. In a quarter of an hour the entire caravan of fifty-five was under way. There were no tardy ones, and so, of course, no stragglers.

The same satisfactory management was to be noted at the finish, which was at Sixtieth street and Fifth avenue. The side street for half a block east had been given over to the club. A temporary fence divided it into two lanes. As the vehicles finished at the corner their time was noted and compared with that of the official observer on board. The contestant then swung his automobile to the left into one of the lanes until the measurers had taken his vehicle's fuel consumption, both gas and water. This will not be announced until later. Along the course the same intelligent conduct of affairs was noticeable. The two controls for steam and electric vehicles each ended at Mianus, Conn., 33 1-3 miles out going and 66 2-3 miles returning. There was ample gasoline and water supply here. At the turn a sufficient force of policemen insured a clear course. The turn was on a broad road with a level grass plot on either side. The contestants found no difficulty in rounding it at 8 miles an hour without a stop.

The first vehicle arrived at the finish a few seconds after the time limit of 6 hours and 4 minutes had expired. From that time on for an hour the arrivals came in an almost unbroken procession. After an hour and a half had elapsed only stragglers came in. There were seven of these between 5:18 and 9 o'clock in the evening.

Whatever opinion may prevail as to the theory of the Automobile Club of America's test, there is no doubt of its having been a most perfectly managed affair on the lines laid down, and a most delightful day's run for all participating. Again the motor vehicle world is in debt to its pioneer club.

The rules of the contest were given in detail last week. Briefly, gasoline cars were required to go the whole journey without a stop, while steam and electrics were permitted to stop at one-third and two-thirds of the journey for supplies and lubrication.

There were seventy-five entries and fifty-five starters, made up of forty gasoline, fourteen steam and one electric carriages. Twenty-six, or nearly 50 per cent of the starters, obtained blue ribbons. Of these ten were driven by steam and sixteen by gasoline, a showing largely in favor of the former. Of the gasoline cars entered twenty-seven were American and thirteen foreign, ten of the former and six of the latter scoring 100 per cent.

THE BLUE RIBBON ARMY

Nearly Fifty Per Cent of the Starters Complete the Journey Without a Stop.

CLASS A—GASOLINE VEHICLES, TO COMPLETE THE RUN WITHOUT A STOP.

No. 23—Long Distance, gasoline, carying two passengers; seven horsepower; weight, 1,200 pounds. Operated by A. J. Lamme; entered by U. S. Long Distance Co. Position at start, thirty-first; position at finish, seventeenth. Started at 9:08:15; arrived at Mianus at 11:27; arrived at Southport at 12:45:10; passed Norwalk, returning, 1:08; arrived Mianus, returning, 1:53; finished at 4:01:45. Full time, 6:53:30. Made no stop.

No. 27—Darracq, gasoline, carrying two passengers; nine horsepower; weight, 1,250 pounds. Operated and entered by Chas. D. Cooke. Position at start, tenth; position at finish, second. Started at 9:02; arrived at Mianus at 11:16; arrived at Southport at 12:25:05; arrived at Norwalk, returning, at 12:47; arrived at Mianus, returning, at 1:31; finished at 3:46:30. Second at finish. Full time, 6:44:30. Made no stop.

No. 28—Darracq, gasoline, carrying two passengers; nine horsepower; weight, 1,250 pounds. Operated and entered by F. A. La Roche. Position at start, ninth; position at finish, first. Started at 9:01; arrived at Mianus at 11:15; arrived at Southport at 12:24:20; arrived at Norwalk, returning, at 12:46; arrived at Mianus, returning, at 1:30; finished at 3:46. First to finish. Full time, 6:45. Made no stop.

No. 33—Mors, gasoline, carrying six passengers; twelve horsepower. Operated by J. Ruditan, entered by J. Seligman. Position at start, forty-fifth; position at finish, seventh. Started at 9:12:15; arrived at Mianus at 11:26; arrived at Southport at 12:35:30; passed Norwalk, returning, at 12:58; arrived at Mianus, returning, at 1:44; finished at 3:53. Full time, 6:40:45. Made no stop.

No. 38—Richard, gasoline, carrying four passengers; ten horsepower; weight, 1,200 pounds. Operated and entered by C. J. Field. Position at start, thirty-eighth; position at finish, fourteenth. Started at 9:10:30; arrived at Mianus, 11:28; arrived at Southport, 12:42:50; passed Norwalk, 1:04:15; finished, 3:58:45. Full time, 6:48:15. Made no stop.

No. 43—Autocar, carrying two passengers; eight and one-half horsepower; weight, 1,200 pounds. Operated by Wm. Morgan. Position at start, forty-ninth; position at finish, sixteenth. Started at 9:13:30; arrived at Mianus at 11:27; arrived at Southport at 12:38; arrived at Mianus, returning, at 1:43; finished at 4:00:15. Full time, 6:46:45. Made no stop.

No. 50—De Dion, gasoline, carrying two passengers; four and one-half horsepower; weight, 850 pounds. Operated and entered by J. F. Hovestadt. Position at start, twelfth; position at finish, twenty-first. Started at 9:04; arrived at Mianus at 11:25; arrived at Southport at 12:38:10; passed Norwalk, returning, at 1:02; arrived at Mianus, returning, at 1:52; finished at 4:07:15. Full time, 7:03:15. Made no stop.

No. 52—Fournier-Searchmont, gasoline, carrying four passengers; eight horsepower; weight, 2,500 pounds. Operated and entered by E. B. Gallaher. Position at start, eighth; position at finish, eighth. Started at 9:02; arrived at Mianus at 11:18; arrived at Southport at 12:36:40; passed Norwalk, returning, at 12:58; arrived at Mianus, returning, at 1:41; finished at 3:56. Full time, 6:54. Made no stop.

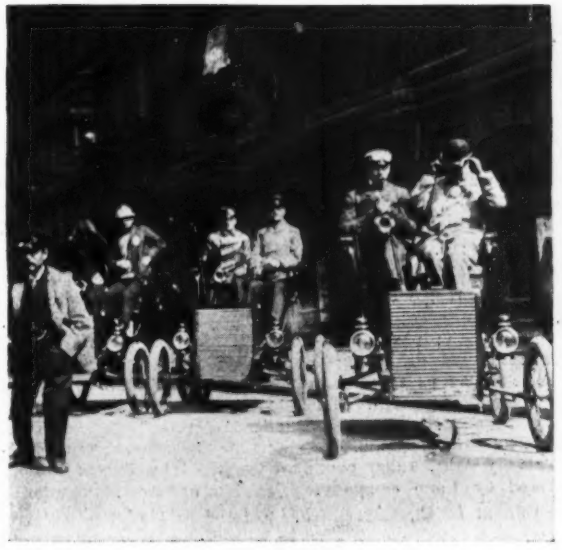
No. 53—Fournier-Searchmont, gasoline, carrying four passengers; eight horsepower; weight, 2,500 pounds. Operated by J. S. Bunting; entered by E. B. Gallaher. Position at start, thirteenth; position at finish, fifteenth. Started at 9:02; arrived at Mianus at 11:15; arrived at Southport at 12:34:30; passed Norwalk, returning, at 12:56:30; arrived at Mianus, returning, at 1:43; finished at 3:59:30. Full time, 6:57:30. Made no stop.

No. 56—Haynes-Apperson, gasoline, carrying two passengers; nine horsepower; weight, 1,950 pounds. Operated by Frank Nutt; entered by Haynes-Apperson Co. Position at start, forty-first; position at finish, thirtieth. Started at 9:11:15; arrived at Mianus at 11:27; arrived at Southport at 12:48:10; passed Norwalk, returning, at 1:12:30; arrived at Mianus, returning, at 1:59; finished at 4:23:15. Full time, 7:12. Made no stop.

No. 58—Knox, gasoline, carrying two passengers; six horsepower; weight, 1,400 pounds. Operated by H. A. Knox; entered by Knox company. Position at start, thirty-fifth; position at finish, fourth. Started at 9:09; arrived at Mianus at 11:25; arrived at Southport at 12:33:55; passed Norwalk, returning, at 12:54; arrived at Mianus, returning at 1:41; finished at 3:52. Full 6:42. Made no stop.

No. 59—Knox, gasoline, carrying two passengers; six horsepower; weight, 1,400 pounds. Operated by J. H. Jones; entered by Knox company. Position at start, thirty-third; position at finish, fifth. Started at 9:08; arrived at Mianus at 11:24; arrived at Southport at 12:33:30; passed Norwalk, returning, at 12:54; arrived at Mianus, returning, at 1:41; finished at 3:52:00. Full time, 6:44. Made no stop.

No. 60—Knox, gasoline, carrying two passengers; six horsepower; weight, 1,400 pounds. Operated by F. H. Fowler; entered by Knox company. Position at start,



Three 100 Per Cent White Steam Carriages.

thirty-seventh; position at finish, twelfth. Started at 9:09:45; arrived at Mianus at 11:26; arrived at Southport at 12:33:40; passed Norwalk, returning, at 12:54; arrived at Mianus, returning, at 1:41; finished at 3:57:30. Full time, 6:47:45. Made no stop.

No. 73—Fournier-Searchmont, gasoline, carrying four passengers; eight horsepower; weight, 2,500 pounds. Operated and entered by R. A. Greene. Position at start, fifteenth; position at finish, thirteenth. Started at 9:04; arrived at Mianus at 11:08; arrived at Southport at 12:37:50; passed Norwalk, returning, at 1:01:30; arrived at Mianus, returning, at 1:49; finished at 3:57:45. Full time, 6:53:45. Made no stop.

CLASS B, SECTION 1—STEAM VEHICLES, TO COMPLETE THE RUN WITHOUT STOPS.

No. 64—White, steam, carrying two passengers; six horsepower; weight, 1,400 pounds. Operated and entered by P. H. Deming. Position at start, thirtieth; position at finish, twenty-ninth. Started at 9:08:15; arrived at Mianus at 11:40; arrived at Southport at 12:45:25; passed Norwalk, returning, at 1:07:45; arived at Mianus, returning, at 1:56; finished at 4:19. Full time, 7:10:45. Made no stop, penalized or otherwise.

No. 65—White, steam, carrying two passengers; six horsepower; weight, 1,400 pounds. Operated and entered by Windsor T. White. Position at start, thirty-second; position at finish, thirty-first. Started at 9:08:45; arrived at Mianus at 11:43; arrived at Southport at 1:02:55; arrived at Mianus, returning, at 2:11; finished at 4:27:15. Full time, 7:18:30. Made no penalized stop. One stop of 28 minutes for tire repair about two miles from the start.

No. 66—White, steam, carrying two passengers; six horsepower; weight, 1,400 pounds. Operated and entered by M. R. Hughes. Position at start, thirty-fourth; position at finish, eleventh. Started at 9:09:15; arrived at Mianus at 11:27; arrived at Southport at 12:36:30; passed Norwalk, returning, at 1:42; arrived at Mianus, returning, at

Three 100 Per Cent Fournier-Searchmonts.

12:56:30; finished at 3:57. Full time, 6:47:45. Made no penalized stop. One stop reported to repair tire.

CLASS B, SECTION 2—STEAM CARRIAGES, WITH STOPS FOR GASOLINE, WATER AND LUBRICATION ONLY AT 33 1-3 AND 66 2-3 MILES.

No. 6—Prescott, steam, carrying two passengers; four and one-half horsepower; weight, 1,300 pounds. Operated by W. H. Wells; entered by Prescott company. Position at start, twenty-second; position at finish, nineteenth. Started at 9:06:15; arrived at Mianus at 11:21; arrived at Southport at 12:55:59; arrived at Norwalk, returning, at 1:15; arrived at Mianus, returning, at 2:04; finished at 4:04. Total time, 6:57:45. Made no penalized stop.

No. 7—Prescott, steam, carrying two passengers; four and one-half horsepower; weight, 1,300 pounds. Operated by H. M. Wells; entered by Prescott company. Position at start, twenty-first; position at finish, twentieth. Started at 9:06; arrived at Mianus at 11:21; arrived at Southport at 12:55:58; arrived at Norwalk at 1:14:45; arrived at Mianus, returning, at 2:04; finished at 4:04:15. Total time, 6:38:15. Made no penalized stop.

No. 17—Grout, steam, carrying two passengers; six and one-half horsepower; weight, 1,300 pounds. Operated by C. D. Grout; entered by Grout Bros. Position at start, twenty-eighth; position at finish, twenty-fifth. Started at 9:07; arrived at Mianus at 11:16; arrived at Southport at 12:38:05; passed Norwalk, returning, at 12:58; arrived at Mianus, returning, at 2:00; finished at 4:15:15. Full time, 7:08:15. Made no penalized stop.

No. 22—Lane, steam, carrying four passengers; ten horsepower; weight, 1,650 pounds. Operated by James Rossa; entered by Lane company. Position at start, twentieth; position at finish, thirty-fifth. Started at 9:05:45; arrived at Mianus at 12:21; arrived at Southport at 1:05:34; arrived at Mianus, returning, at 2:28; finished at 4:50. Full time, 7:44:15. Made no penalized stop.

No. 29—Locomobile, steam, carrying two passengers; three and one-half horsepower; weight, 985 pounds. Operated by Murray Page; entered by Locomobile company. Position at start, third; position at finish, eighteenth. Started at 9:01; arrived at Mianus at 11:37; arrived at Southport at 12:38:50; arrived at Norwalk, returning, at 1:02; arrived at Mianus, returning, at 2:06; finished at 4:03. Full time, 7:02. Made no penalized stop.

No. 30—Locomobile, steam, carrying two passengers; three and one-half horsepower; weight, 1,250 pounds. Operated by R. S. Davis; entered by Locomobile company. Position at start, sixth; position at finish, twenty-sixth. Started at 9; arrived at Mianus at 11:17; arrived at Southport at 12:35:40; arrived at Norwalk, returning, at 12:56:30; arrived at Mianus, returning, at 1:51; finished at 4:16:15. Full time, 7:16:15. Made no penalized stop.

No. 67—Overman, steam, carrying two passengers; four and one-half horsepower; weight, 1,500 pounds. Operated by E. E. De Gowin; entered by Overman Automobile Co. Position at start, first; position at finish, tenth. Started at 9; arrived at Mianus at 11:16; arrived at Southport at 12:34:10; passed Norwalk, returning, at 12:54:30; arrived at Mianus, returning, at 1:52; finished at 3:56:30. Full time, 6:56:30. Made no penalized stop.

ON TIME, BUT RECEIVED NO AWARD.

The following completed the course within 8½ hours, but had made one or more stops:

No. 2—Packard, gasoline, carrying two passengers; twelve horsepower; weight, 2,100 pounds. Operated by W. S. Ions; entered by Adams & McMurtry. Position at start, sixteenth; position at finish, ninth. Started at 9:04:30; arrived at Mianus at 11:18; arrived at Southport at 12:43:15; passed through Norwalk, returning, at 1; arrived at Mianus, returning, at 1:38; finished at 3:56:15. Full time, 6:51:45. Made one penalized stop.

No. 3—Packard, gasoline, carrying two passengers; sixteen horsepower; weight, 2,100 pounds. Operated by F. C. Marsh; entered by Adams & McMurtry. Position at start, seventeenth; position at finish, thirty-fourth. Started at 9:04; arrived at Mianus, 11:18; arrived at Southport, 12:34:20; arrived at Norwalk, returning, at 12:56; arrived at Mianus, returning, at 1:48; finished at 4:43:30. Full time, 7:39:30. Made three penalized stops on account of hot bearings.

No. 5—Grout, steam, carrying two passengers; four and one-half horsepower; weight, 1,000 pounds. Operated by W. J. Gould; entered by Grout Bros. Position at start, twenty-fifth; position at finish, thirty-seventh. Started at 9:07:45; arrived at Mianus at 11:16; arrived at Southport at 12:37:40; arrived at Norwalk, returning, at 12:58, arrived at Mianus, returning, at 2:03; finished at 5:18. Total time, 8:10:15. Made one penalized stop.

No. 8—Mors, gasoline, carrying four passengers; sixteen horsepower; weight, 2,200 pounds. Operated and entered by Wm. N. Beach. Position at start, fifty-first; position at finish, twenty-third. Started at 9:14:15; arrived at Mianus, 11:48; arrived at Southport, 12:45:17; arrived at Norwalk, returning, 1:02; arrived at Mianus, 1:50; finished at 4:12:45. Full time, 6:58:30.

No. 21—Prescott, steam, carrying two passengers; four and one-half horsepower; weight, 1,300 pounds. Operated and entered by F. E. Magee. Position at start, twenty-third; position at finish, thirty-third. Started at 9:06:30; arrived at Mianus at 11:21; arrived at Southport at 12:57:40; arrived at Mianus, returning, at 2:14; finished at 4:34:45. Full time, 7:28:15. Made four penalized stops, caused by back firing of the burner.

No. 24—Knickerbocker, gasoline, carrying three passengers; five horsepower; weight, 1,000 pounds. Operated by A. Emory; entered by Ward-Leonard Co. Position at start, twenty-fourth; position at finish, twenty-second. Started at 9:06:45; arrived at Mianus at 11:27; arrived at Southport at 12:38:59; passed Norwalk, returning, at 1:04; arrived at Mianus, returning, 1:51; finished at 4:10:30. Full time, 7:03:45. Made one penalized stop.

No. 32—Packard, gasoline, carrying four passengers; twelve horsepower; weight, 2,200 pounds. Operated and entered by H. W. Whipple. Position at start, eighteeenth; position at finish, third. Started at 9:05; arrived at Mianus at 11:18; arrived at Southport at 12:29:15; arrived at Norwalk, returning, at 12:52; arrived at Mianus, returning, at 1:36; finished at 3:50:30. Full time, 6:45:30. Made one penalized stop, due to valve troubles.

Mr. La Roche's Darracq Entry.

No. 36—Peerless, gasoline, carrying two passengers; sixteen horsepower; weight, 1,700 pounds. Operated by C. J. Wridgway; entered by Peerless company. Position at start, forty-seventh; position at finish, twenty-seventh. Started at 9:12:45; arrived at Mianus, 11:41; arrived at Southport at 12:46:15; passed Norwalk, returning, at 1:07; arrived at Mianus, returning, at 1:56; finished, 4:18. Full time, 7:05:15. Made two penalized stops, each time to clean sparking points.

No. 39—Richard, gasoline, carrying four passengers; ten horsepower; weight, 1,200 pounds. Operated by W. J. Hart; entered by Alex Fischer. Position at start, fortieth; position at finish, sixth. Started at 9:11; arrived at Mianus at 11:28; arrived at Southport at 12:39:25; passed through Norwalk, returning, at 1:01; arrived at Mianus, returning, at 1:47; finished at 3:51:30. Full time, 6:40:30. Made one penalized stop.

No. 41—Long Distance, gasoline, carrying two passengers; seven horsepower; weight, 1,400 pounds. Operated and entered by I. W. England. Position at start, fifty-fifth; position at finish, thirty-sixth. Started at 9:16; arrived at Mianus at 11:45; arrived at Southport at 1:14:08; passed Mianus, returning, at 2:38; finished at 5:13. Full time, 7:57. Made two penalized stops.

No. 47—Panhard, gasoline, carrying four passengers; twelve horsepower; weight, 2,600 pounds. Operated and entered by Geo. Arentz, Jr. Position at start, fourteenth; position at finish, twenty-fourth. Started at 9:03:45; arrived at Mianus at 11:33; arrived at Southport at 12:44:58; passed Norwalk, returning, at 1:05; arrived at Mianus, returning, at 2:02; finished at 4:13:15. Full time, 7:09:30. Made one penalized stop for water.

No. 55—Gasmobile, gasoline, carrying two passengers; twelve horsepower; weight, 2,500 pounds. Operated by W. H. Owen; entered by H. C. Cryder. Position at start, fifty-third; position at finish, thirty-second. Started at 9:14:45; arrived at Mianus at 11:28; arrived at Southport at 12:39:20; passed Norwalk, returning, at 1:02:30; arrived at Mianus, returning, at 1:46; finished at 4:28:45. Full time, 7:14. Made two penalized stops, due on each occasion to disconnection of coil.

No. 62—Darracq, gasoline, carrying four passengers; nine horsepower; weight, 1,300 pounds. Operated and entered by A. H. Tatum. Position at start seventh; position at finish, twenty-eighth. Started at 9:01; arrived at Mianus, 11:18; arrived at Southport at 12:41:45; passed Norwalk, returning, at 1:07:45; arrived at Mianus, returning, at 1:56; finished at 4:18:30. Full time, 7:17:30. Made three penalized stops.

The remaining vehicles had not finished in time to have made it possible for them to have made a non-stop journey, though several arrived inside of the limit of 12½ hours. The following completes the list of starters:

No. 12—Pierce, gasoline, carrying two passengers; three and one-half horsepower; weight, 700 pounds. Operated by Percy P. Pierce; entered by Geo. N. Pierce Co. Position at start, twenty-seventh. Started at 9:07:30; arrived at Mianus, 12:20; arrived at Southport, 2:32:20; arrived Mianus, returning, at 5.

No. 14—Daimler, gasoline, carrying four passengers; twelve horsepower; weight, 1,700 pounds. Operated and entered by J. Seligman. Position at start, forty-third. Started at 9:11:45; finished at 4:26:45, but had not gone over the course, having retired at Larchmont on account of tire troubles.

No. 18—Benz, gasoline, carrying six passengers; ten horsepower; weight, 2,000 pounds. Operated and entered by E. C. Jones. Position at start, forty-fourth. Started at 9:12; arrived at Mianus at 11:39; not recorded at Mianus, returning, nor at finish.

No. 19—Coffee, gasoline, carrying six passengers; twenty horsepower; weight, 3,000 pounds. Operated by Mr. Coffee; entered by C. E. Miller. Position at start, thirty-sixth. Started at 9:10. Did not reach the first control.

No. 20—Packard, gasoline, carrying four passengers; twelve horsepower; weight, 2,200 pounds. Operated and entered by Osborn W. Bright. Position at start, nineteenth. Started at 9:05:15. No arrival at any control recorded.

No. 25—Knickerbocker, gasoline, carrying three passengers; five horsepower; weight, 1,000 pounds. Entered by Ward Leonard company. Position at start, fiftieth. Started at 9:14; arrived at Mianus at 11:29; arrived at Southport at 1:16:59. No return to Mianus or finish recorded.

No. 26—Knickerbocker, gasoline, carrying four passengers; five horsepower; weight, 1,050 pounds; entered by Ward Leonard company. Position at start, twenty-sixth. Started at 9:07:15; arrived at Mianus at 11:24; arrived at Southport at 1:27:58; arrived at Mianus, returning, at 3:25.

No. 31—Locomobile, steam, carrying two passengers; six horsepower; weight 1,750 pounds. Operated by J. McAlman; entered by Locomobile company. Position at start, second. Started at 9. Not recorded thereafter.

No. 34—Haynes-Apperson, gasoline; carrying four passengers; nine horsepower; weight, 2,000 pounds. Entered by H. S. Chapin. Position at start, forty-second. Started at 9:11:30; arrived at Mianus at 11:26; arrived at Mianus, returning, at 4:22. Finished inside of time limit.

No. 35—Haynes-Apperson, gasoline, carrying two passengers; six horsepower; weight, 1,250 pounds. Entered by H. S. Chapin. Position at start, thirty-ninth. Started at 9:10:45; arirved at Mianus at 11:28; arrived at Southport at 2:18:58; arrived at Mianus, returning, at 3:49; finished inside of time limit.

No. 37—Peerless, gasoline, carrying two passengers; sixteen horsepower; weight, 1,700 pounds. Entered by Peerless company. Position at start, forty-eighth. Started at 9:13:15; arrived at Mianus at 11:29; arrived at Southport at 12:43:10; passed through Norwalk at 1:05; arrived at Mianus, returning, at 1:56.

No. 42—Long Distance, gasoline, carrying two passengers; seven horsepower; weight, 1,400 pounds. Entered by E. A. Riotte. Position at start, forty-ninth. No record of arrival at Mianus.

No. 46—Columbia, electric, carrying two passengers; weight, 2,000 pounds. Entered by Electric Vehicle Co. Position at start, fifty-second. Started at 9:14:30; arrived at Mianus at 11:42; arrived at Southport at 1:17:30 and did not return.

No. 48—Desberon, gasoline, carrying two passengers; eight horsepower. Operated and entered by D. S. Brown, Jr. Position at start, eleventh. Started at 9:02; arrived at Mianus at 11:20. No further record.

No. 49—Gasmobile, gasoline, carrying five passengers; twelve horsepower; weight, 2,800 pounds. Operated and entered by J. H. Yockel. Position at start, twenty-ninth. Started at 9:08; arrived at Mianus at 12; arrived at Southport at 1:40:38; arrived at Mianus, returning, at 3:12; finished inside of time limit.

No. 54—Gasmobile, gasoline, carrying two passengers; nine horsepower; weight, 1,900 pounds. Operated by W. H. Owen; entered by H. C. Cryder. Position at start, forty-sixth. Started at 9:12:30; arrived at Mianus at 11:28; arrived at Southport at 12:42:18. Retired before reaching Norwalk, returning through stripping of compensating gear.

No. 68—Overman, steam, carrying two passengers; four and one-half horsepower; weight, 1,500 pounds. Entered by Overman Automobile Co. Position at start, fourth. Started at 9; arrived at Mianus at 11:23; arrived at Southport at 1:11:58. Not recorded at Mianus returning.

No. 72—Cottereau, gasoline, carrying four passengers; weight, 1,400 pounds. Entered by Central Automobile Co. Position at start, fifty-fourth. Started at 9:15; arrived at Mianus at 1:02; arrived at Southport at 2:30:36; arrived at Mianus, returnin, at 3:52.

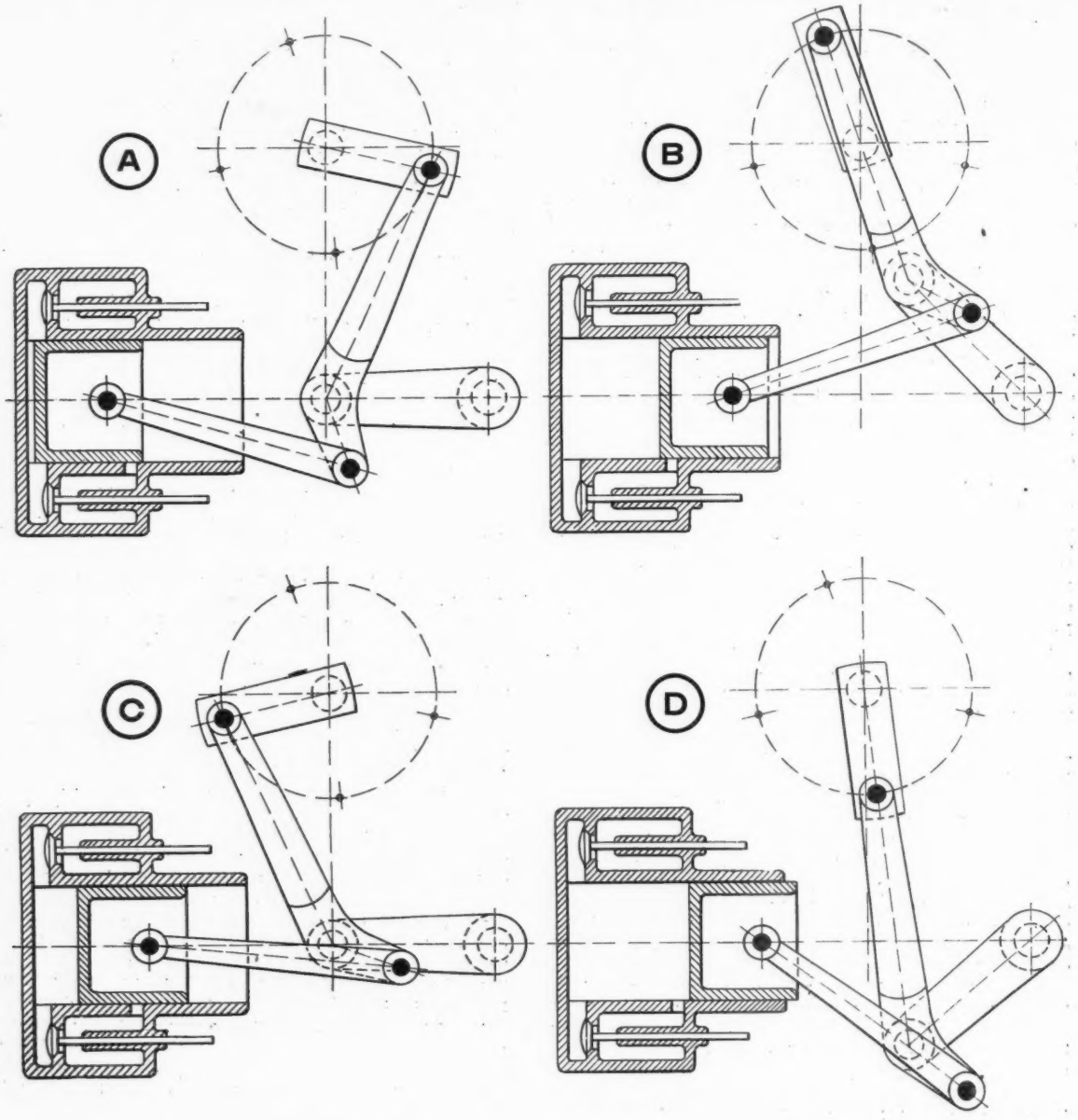
COMPLETE IN ONE REVOLUTION

Hydro-Carbon Motor with a Four-Cycle Operation at Each Revolution of the Crank Shaft

Some years ago the writer read an article which stated that the future gas engine should have its cycle of operations complete in one revolution of the crank shaft and should have either a scavenger charge or a means of entirely forcing the burned charge out of the cylinder. A great many attempts have been made to accomplish these results. Engines with a secondary or auxiliary cylinder and piston, others with two and in some cases three pistons working in one cylinder have been made, and various other combinations too numerous to mention.

In the fall of 1894 the writer built a motor similar to the one about to be described. It was a modification of a type of motor built in Great Britain, known there as the Atkinson cycle gas engine. Unfortunately, soon after the completion and subsequent testing of this motor the building in which the machine shop was located was burned, as were the motor, patterns, working drawings and photographs. All the writer has had to guide him in this description and illustration are a few rough sketches.

This motor had a four-cycle operation for every revolution of the crank shaft; an almost complete expulsion of the exhaust products; an expansion stroke somewhat greater than the admission stroke and an auxiliary exhaust or relief passage at the end of the outward stroke. The latter was only uncovered during the expansion or working stroke of the motor, and remained cov-



ered during the admission stroke by the piston, so as to prevent any of the exhaust gases from being drawn back into the cylinder from the exhaust pipe.

The motor had only three more parts than an ordinary four-cycle motor to accomplish the added functions—namely, an obtuse angled bell crank level and two rocker arms. No reduction or two to one gearing was needed, as the exhaust and ignition mechanism were operated directly from a single cam on one end of the crank shaft.

Diagram A shows the commencement of the cycle of operation of the motor. The piston has reached the end of the exhaust stroke, almost entirely expelling the burned gases from the cylinder, and is in position for drawing in a new charge of mixture. The piston then moves outward to the position shown in diagram B, but not far enough to uncover the auxiliary or relief exhaust passage. The charge is then compressed by the return stroke of the piston to about three-eights of its original volume, as shown in diagram C, and at the desired point ignition takes place, and the piston travels out to the position shown in diagram D, expanding the charge, and at the end of this outward stroke uncovers the relief exhaust passage, allowing the burned gases to escape, thereby reducing the internal pressure almost to that of the atmosphere. The main exhaust valve shown in the diagrams below the cylinder then opens, and the piston returns to the position shown in diagram A, forcing out all the burned gases except the slight amount which may stay in the spaces required for the valve clearances, thereby allowing an undefiled charge of mixture to be taken into the cylinder.

The bore of the cylinder was 4 inches, the working stroke of the piston 3 inches, the clearance at the end of the compression stroke 1½ inches and the exhaust stroke 4½ inches. The ignition was of the primary make and break type with wiping contact. The flywheel of the motor was 24 inches outside diameter and weighed about 120 pounds. On a brake test the motor gave a little over 2½ horsepower at 600 revolutions per minute. If jump spark ignition could have been used (it was in an experimental stage at that time and was not considered practical) it probably could have been tested at higher speed and would have shown better results as to a brake test.

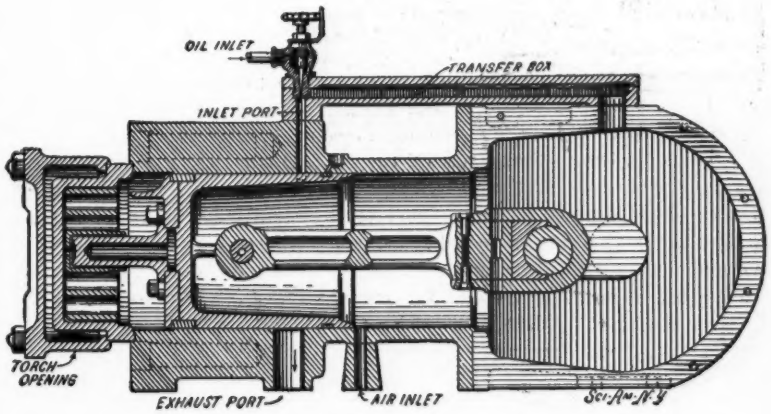
This motor ran remarkably steady and was far more free from vibration than the ordinary type of single cylinder motor in common use. It was interesting and quite a novelty to watch the peculiar movements of the bell crank, rocking levers and connecting rod during the operation of the motor. After the catastrophe before mentioned the matter was dropped. Some day, perhaps, it may be taken up again.

When Emile Voigt returns from his next trip to Europe he will bring a balloon for S. D. Proctor Smith, of Smith & Mabley, who is an enthusiast on aerial navigation and who, while in Paris last year, made a number of successful ascents.

CATALYTIC IGNITION IS EMPLOYED

Engine Maker in Connecticut Said to Have Solved the Problem in Automobile Motors

New York, May 26.—A kerosene engine having no electrical parts or ignition troubles is being made by the International Power Vehicle Co., of Shamford, Conn. Engines of this character have long been in use for stationary purposes, but it remained for this firm to produce an engine which has a practical value in the automobile industry. The engine is constructed on the two cycle principle and valves are dispensed with by employing the piston to open and close the inlet and exhaust parts in the usual manner. The kerosene



is fed through a needle valve into the transfer pipe and is carried directly into the cylinder by the compressed charge of air from the crank case, the air originally entering the crank case through a port uncovered by the piston when at the top of its stroke. The charge enters the cylinder and is deflected upward, a part of it being caught in the small auxiliary cylinder at the end of the cylinder proper, when the auxiliary piston enters it after the main piston has traversed about half its stroke. The sudden high compression combined with the head of the cylinder head fires it. The flame passes through a small hole at the end of the auxiliary cylinder, then at right angles through a narrow passage, communicating with a series of holes leading back to the cylinder proper. Passing through these holes it fires the charge in the main cylinder. The use of a high compressor or a hot tube in the main cylinder is thus done away with by using the small piston to fire the charge.

Before the engine is started the head is heated with a blow torch for a few minutes to explode the first charge. The high compression in the small cylinder and the constant firing of the mixture maintains the heat in the head. It is said the engine can be stopped for 15 minutes without necessitating the reheating of the head.

CHICAGO DECORATION DAY ROAD RACE

JAMES E. GILL, THE WINNER.

RICHARD STRUTZ, WINNER OF SECOND PLACE

The American Century Wheelmen held their 100-mile race over the Waukegan course Decoration day and once again the north side looked as it did years ago when the cycling population turned out in thousands to witness what was then the greatest cycling event in the world. As it was thousands did turn out, but not to see the start, as the first man was sent away at 6 a. m. Out of about seventy entries some sixty starters were in line when the starter called time and of these the winner, James Gill, was one. He with three others were given 2 hours' start and the way he rode, after leaving the starting line, showed that his real mark should have been nearer thirty minutes. He was not passed along the line nor did he have an accident of any kind. He finished at 12:36:38, about 5 minutes ahead of the second man, Dick Strutz, who started with a start of 1 hour and 30 minutes.

All interest centered in the winner of the time prize, however, and it was not until Blum, "Farmer," as he is termed, came down the boulevard in a stiff brush with A. Peterson and E. S. Lindenau, the former a 10-minute and the latter a 20-minute man, that the crowd went wild with enthusiasm. Blum's time for the 100 miles was 5:17:12, a remarkable record considering the condition of the roads and the wind. Blum is one of the fastest road riders in the west and has to his credit last year's century road race time prize and that of the Wheeling, two Pullmans and the Lake Komo road races, all of which were hotly contested among the best riders in this section of the country.

Gill, on the other hand, is a novice and never rode in a race before. He is 29 years of age and married, his wife being one of the most eager to see him win in the recent event. She was at the tape at the finish and as he crossed the line ran up to him and planted a kiss where it would do the most good, no matter if there were a few thousand spectators viewing her action, for which she and Gill were profusely cheered.

The first twenty to finish with their handicaps and actual time are as follows:

No.	*Name.*	*Handicap.*	*Time.*
1	J. E. Gill	2:00	6:36:35
2	Richard Strutz	1:30	6:12:00
3	P. D. Townsend	0:50	5:47:05
4	Fred Herbst	0:20	5:25:55

FINISH OF THE 100-MILE ROAD RACE, GILL LEADING

No.	Name.	Handicap.	Time.
5	G. W. Lindenau	0:30	5:35:56
6	H. Hultgren	0:20	5:25:57
7	A. Peterson	0:10	5:27:10
8	E. S. Lindenau	0:20	5:37:11
9	William Blum	Scratch	5:17:12
10	John Vickery	1:10	6:32:00
11	E. G. Winnemeyer	0:50	6:33:50
12	A. J. Rennen	0:50	6:33:51
13	A. T. Crutchen	1:10	6:54:40
14	Charles Stuckles	0:30	6:17:00
15	Martin Crook	0:50	6:42:23
16	Louis Wuerffet	1:00	6:53:24
17	F. Sauder	1:00	6:53:25
18	Walter Brunn	0:30	6:29:10
19	H. Fredrick	1:00	7:13:00
20	C. E. Baker	0:50	7:12:00

IRVINGTON-MILLBURN DRAWS THOUSANDS

Solitary Rider From Northern New York Upsets Chances of a Hundred Jerseymen

New York, June 1.—The Irvington-Milburn race still flourishes and with the added interest of motor cycles was a complete success yesterday. A man who never before was on the course won. He was Samuel La Voice, of Syracuse, N. Y. He sprinted across the tape half a length in front of James Zanes, of Newark, with Otto Wolf another half length back. La Voice had a handicap of 5 minutes and 30 seconds; Zanes had 5 minutes; Wolf was a limit man, with 7 minutes.

It was a wonderful race in several respects. The record for the ride over the foothills of the Orange mountains was signally shattered. It was the first time in years that the time for the course has been improved. Charles H. Schlee, the Newark board-track rider, who started from scratch and won the first time prize, rode the distance in 1 hour 7 minutes 42 seconds. This is just 1 minute and 5 seconds better than the former record, made by Monte Scott on Memorial Day, 1895.

It was a hard race over a fast course with fair favor to all. It was distinctive because of a comparatively small number of accidents. Not more than a dozen riders fell and not one was severely hurt. For the rest it was the same grand old "cycling Derby." The general public lined the road. Thousands of persons went afoot, more went on bicycles, several hundreds had carriages and a few were seated in automobiles drawn up at the roadside.

There were 109 stout limbed lads entered and 101 of them started. The first of them, with a 7-minute handicap was pushed across the tape at 11:58:10 o'clock.

At 5 miles Hugo Wolf, Oscar Hoag and Emil Hollander came along closely bunched. La Voice was then twelfth. At 10 miles Robert Meyers led, with La Voice twenty-third. At 15 miles Meyers, Wolf and W. R. Lee were the first three. La Voice was then eighth. At 20 miles Meyers still led, with James Zanes and Boyden close behind. La Voice was fourth. At the finish the first three men came with the speed of sprinters on a track. They jumped out from a bunch of eight and made a royal struggle of it. A thousand voices pierced the air in cheers. Thirty seconds, it seemed, after they had passed the finish line there came another bunch of eight or nine and the cry went up: "Way for the scratch men. Here's Van Velsor and Schlee." Sure enough there they were, Schlee in front, Danny O'Neill next and Van Velsor third.

Following is a summary:

Name.	Handicap.	Net Time.
Samuel La Voice, Syracuse	3:30	1:12:50
James Zanes, Newark	5:00	1:12:21
Otto E. Wolf, Bloomfield	7:00	1:14:22
Robert Meyers, Paterson	5:30	1:12:54
Albert Widman, Newark	6:30	1:13:55
Harry Chapman, Elizabeth	6:00	1:13:26
Daniel O'Neill, Newark	5:30	1:13:05
W. H. Boyden, Newark	6:00	1:13:36
W. H. Caldwell, New York	5:30	1:13:07
U. Wilkens, Jr., New York	5:00	1:12:40
Charles Schlee, Newark	Scratch	1:07:42
Albert L. Cahn, New York	2:00	1:09:45
Jerome Steiner, Hicksville	5:00	1:12:46
Karl Larson, Vailsburg	6:00	1:13:47
Edgar Van Velsor, Oyster Bay	Scratch	1:08:00
Charles D. Hughes, South Orange	4:00	1:12:02
John Conklin, Millburn	4:00	1:12:03
Joseph S. Reynolds, Brooklyn	4:00	1:12:15
Andrew Chubb, Jr., Bloomfield	4:00	1:12:25
Otto Hawbacker, Watsessing	3:00	1:12:25
Frank Swartz, Newark	6:30	1:15:58
Edward J. Abernethy, Hilton	4:30	1:15:00
G. H. Davis, Yonkers	5:30	1:16:02
W. F. Whittkop, Millburn	5:00	1:15:52
Edward Meyers, Paterson	3:00	1:14:05
H. D. Hooper, Belmar	2:00	1:13:50
William Van Iderstine, South Orange	3:00	1:14:50
Joseph Rockwitz, New York	3:00	1:14:52
Charles A. Widman, Newark	4:00	1:15:00

Before the chief event there was run a 10-mile race for motor bicycles. There were six starters and five finishers in this. One of the riders went away, got a puncture and never came back. It was a runaway race for Wyckoff. He won by half a mile, but he has been protested on the ground that the cylinder of his motor exceeded the diameter allowed by the rules. Wyckoff covered the first 5 miles in the remarkable time of 8 minutes, 45 seconds. The protest against him will be decided later. Summary:

F. A. Wyckoff, Newark, 18 minutes 17 seconds; W. T. Green, Newark, 19 minutes 18½ seconds; G. W. Condon, Newark, 22 minutes 8 seconds; L. C. Bennett, East Orange, 22 minutes 4 seconds; William Mueller, New York, 26 minutes 2½ seconds.

TAYLOR SUFFERS THREE DEFEATS

German Capital Fails to Agree With the Colored Boy — Beaten by Third-Raters

The two days meeting held in Berlin May 19 and 20 was one of the best attended ever held in the German capital. Taylor's participation in the races was the principal cause. Taylor, however, suffered defeat both days. On the first day the major won his heat and semi-final in the scratch race with comparative ease. In the final he met Arend and Bixio and it resulted in one of the hardest races the colored boy ever fought. Fully two laps before the end the German crack started to sprint and, as is well known, he is well able to keep up a fast pace for a long time. When within 50 meters of the tape Taylor made a final effort, but the German was with him and kept the lead. It was a splendid finish for the colored rider came within 5 inches of winning.

On the following day all of the riders took place in

the scratch race and Taylor was defeated in his heat by third class men, who did some splendid team and pocket work. He entered the consolation race. The first semi-final had been won by Arend from Meyers and the second by Rutt from Huber. In the last Taylor, Ferrari, Seidl and Meyer lined up. Right at the start Meyer ran away and Taylor after him. As soon as he was caught Seidl ran away and again the major took the lead and caught Seidl at the bell. Then Ferrari passed ahead and had little difficulty in defeating Taylor by a full length, the latter being tired out from his two efforts.

Major Taylor's third defeat occurred on the 21st in a three-cornered match with Arend and Rutt. In all three heats Arend was last, but little Rutt beat Taylor in two heats, while in the third the American won by a length.

PROMISES A "BEST ON RECORD"

Metropole Club's Plans for Fourth of July Invitation Races at Manhattan Beach

New York, May 31.—Talk about race meets and record-breaking attendance! Just wait until June 21 and you will see the biggest thing doing at Manhattan Beach in the line of a bicycle tournament this country has ever seen. This is no sarcasm and no joke, either. On that day the Metropole Cycling Club, the bicycle booming organization of veterans will give an invitation meet, with the funniest programme of professional and amateur events the ingenuity of "Batch" and the racing mossbacks of the club can devise. Manufacturers and dealers have agreed to buy tickets up in the tens of thousands at a nominal figure and distribute them free. The prizes and expenses will be paid from this fund. The club wishes no profit and only seeks to show the press and public that cycling is not dead and that cycle racing is its most popular factor. The club promoted the recent Courtney contest and has a motor cycle race from Boston to New York in June under way also. This is what's doing in cycling in effete New York. Dealers are enthusiasts over the business boom that has already resulted here this spring.

Unsatisfactory Race Between Linton and Robl

If ever both crowd and riders were disappointed it happened during the one hour race between Linton, Robl and Bouhours, at the Buffalo track on the 18th of last month. A very large crowd had gathered around the "saucer," expecting a record breaking contest. When the hour was over only a little over 37 miles had been ridden, while the record is over 45 miles. During the first 15 minutes nothing sensational happened. Bouhours was lapped and was making no effort. owing to poor pacing service. A few seconds after the twentieth kilometer Robl stopped, under the impression that his front tire had punctured, and before he was again behind his tandem Linton was leading by three laps. At the thirtieth kilometer Linton's tire punctured and he lost three laps. He still had two to the good, but before another lap was covered his chain broke and he lost three more. Hardly had he covered a few meters on his new machine when the chain again broke and he lost another three. Of course this practically put an end to the race and the German rider had no difficulty in winning. At the end Linton was even overhauled by Bouhours, who finished second.

Hurley Again Beats Record

Newark, N. J., June 1.—Marcus Hurley, the amateur champion, created a new world's competition and handicap record in the 5-mile handicap at Vailsburg this afternoon. On scratch with him were Schlee, Dillington and Harry Wilsing. Forty were started at once, a method recently adopted at this track in the long handicaps. There were lap prizes, and the bunch was not caught until a half mile from home. In an inches apart finish Hurley won in 11:09 1-5, which supplants the 11:13 4-5 seconds by J. T. Ingraham at the Pan American races last year.

Little Joe Nelson made his professional debut in a 15-mile paced match with Harry Caldwell. He led until the eleventh mile, when his motor gave out and let Caldwell into a winning lead. The time was 23:27.

Cleveland Races an Old-Time Success

Cleveland, O., June 2.—The Decoration Day meet, given in this city, resembled the old time meets, except that the motor cycle took an important part in the events. The attendance was something over 1,000 and the enthusiasm all that could be wished for. There were entries from all parts of the central West. Chicago was well represented by George Leander, who defeated Lester Wilson, of Pittsburg, in a 5-mile motor paced match for a $500 purse. Each man run one heat and the final, a one-mile heat, was captured by Leander in 1:33. Wilson's time being 1:39. F. H. Lauwell, a Columbus rider, was the star of the amateur events, winning two firsts and a third. Furtes, the Cleveland crack, failed to show better than a second.

Heavy Tax on Motor Bicycles

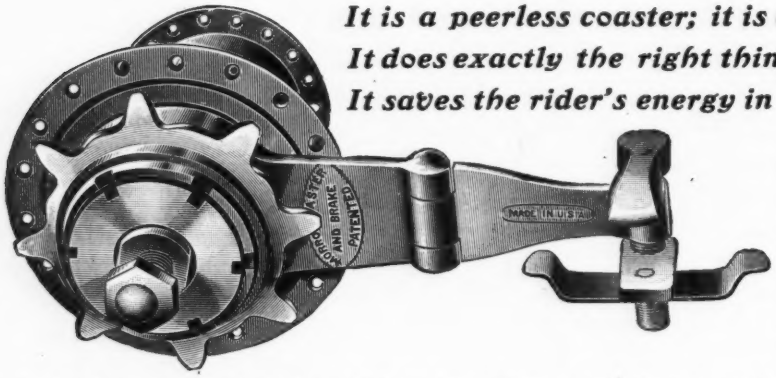
St. Louis, May 29.—By a recent ruling of the license commissioner motor bicycles must pay a license of $10 per annum. A letter received from the license collector this morning states that it was due January 1 and after June 1 all delinquents will be prosecuted.

Sucess of D. & J. Hangers

In the 100-mile road race in Chicago Decoration Day, the winner of the event and of the first, second and third time prizes rode machines fitted with D. and J. hangers, made by the Park City Mfg. Co., Jackson and Clinton streets, Chicago.

THE SUPERIORITY OF THE MORROW

Rests Not in One Feature, But in the Complete Whole.



It is a peerless coaster; it is a peerless brake.
It does exactly the right thing in exactly the right way.
It saves the rider's energy in coasting or in braking.

As a brake it takes hold quickly but not violently; the slightest application retards the wheel's momentum and once applied, it does not require hard and continuous and energy-consuming back-pedalling pressure to keep it applied. It does not depend on the heat generated by thefriction of metal against metalfor its effective operation.

The Morrow is the result not of a few months' limited experience but of several years' use in all parts of the world by all kinds and conditions of men. It is no experiment.

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New Kelly Generator ...

For Steam Vehicles
Improved—Perfect in Every Way

Drip cup unnecessary in starting—Aluminum case over generator—All connections on the outside—Strongly made—Easily adjusted—No flaring or flashing in lighting, even in strong wind. A quick and powerful generaton—Main fire valve controlled at seat—Small and neat in appearance and adapted for any machine.

Our new One-Piece Cast Burners have been greatly improved both in power and strength. No wedged tubes in its construction. All in one piece and easily cleaned.

Address, KELLY HANDLE BAR CO., Cleveland, O., U. S. A.

Pittsburg, Pa., June 2.—Editor MOTOR AGES We are on the hunt for cement that will hold rubber to steel. If you can put us on the track of any such cement, or makers of same, you will confer a great favor.—Yours, etc., Wm. O. Donovan.

Try gelatine dissolved in acetic acid. It is an expensixe but effective preparation. Another is high grade fish glue, which is less expensive but not quite as effective.

Gasoline Engines in High Altitudes

Leadville, Colo., May 24.—Editor MOTOR AGE: This is one of the most promising fields for the automobile in the United States if the manufacturers would get out a machine suited to the country. The mining men here all have to do a great deal of traveling back and forth from their homes to the mines at times. This necessitates keeping a team all the time, which is much more expensive and slower than an automobile. These men are generally wealthy enough to afford a good auto. Gasoline machines are all right at lower altitudes but all the mining camps are at high altitudes and the gasoline engine as constructed at present does not give satisfaction at this distance above sea level. Of course the makers all claim that their engine will run well anywhere but this is all nonsense for I have had experience with all of them. There are some of them here whose owners send for me very often to get them started. I always succeed but it is annoying to them as well as me.

If the makers would consider that the air pressure here is only 10 pounds while at sea level it is 15 they should know that we must necessarily have a differently designed engine to introduce the required amount of oxygen for combustion. I think I could design an engine which would run as well here as at sea level, but not being in that business at present I will leave it to some one else who will do it some day.

Gas engines, as at present constructed, will develop about 60 per cent of the power here that they will at sea level but the mixture is so rarefied that they will miss explosions, or stop completely if there is the smallest leak or disarrangement of the valve gear.

Now, coming to steam, we have the most satisfactory motive power for this country so far tried. In this case though, the burners are designed by people who know nothing about the conditions. There is no excuse for back firing with a properly designed burner and we should also have better combustion and greater fuel economy. On my steam rig I can light the gases coming out of the smokestack at any time that I have the burner turned high and I have one of the best known burners on the market. The gases have no space for combusion before they strike the cold surface of the boiler and are immediately extinguished, coming out of the stack as carbon monoixde instead of carbon di-oxide as they should. I am going to build a burner which I know will show 40 per cent better economy than any now on the market, and I will have no further trouble with back-firing.

In regard to the other parts of an automobile, we will require wood wheels of large diameter, I think about 34 inches, long wheel-base and pneumatic tires. We don't have much trouble with sand or mud out here; nothing but rocks, and I think the pneumatic tire is the only thing to take up the vibration and save the machinery. As to wire wheels, they are good enough for bicycles and baby carriages but they will never stand the hard work of an automobile in this country. I have a one-seated steam machine with large engine and boiler power. It does the work well around here (with the exception of the burner), can climb any hill with ease and weighs just 1,000 pounds loaded with supplies. I have a great deal of pleasure with it. I am completing a three-seated steam rig with large engine and 24-in. boiler, received from the P. J. Dasey Co., of Chicago, 32-in. wheels and 4-in. pneumatic tires, which I think will be a corker. It will weight about 3,000 pounds and is designed for express esrvice.—Yours, etc., T. D. Kyle.

Wants Prices of Light Motors

Memphis, Tenn., May 30.—Editor MOTOR AGE: Will some of your patrons kindly furnish me price and cuts of castings for light running motor, say, from 1 to 2 horsepower, which could be used for motor cycle? Any information will be thankfully received.—Yours, etc., C. W. Haywood, 160 Adams street.

Doctor Relates His Experiences

Pittsfield, Mass., May 30.—Editor MOTOR AGE: A year ago I bought a Winton and used it through the summer, during which time I had but one stop on the road, caused by the breaking of the exhaust spring. Fortunately, this happened just as I was starting out. In the spring I sold this machine, intending to buy a touring car. I found I could not get one before the last of June. I went to New York and spent a week looking and trying everything for sale. Of course I called on the Winton people, and when Mr. Owen assured me that his company would make me a nice dos-a-dos seat for the same model I used last year I immediately gave my order. It came in due course and I have found it perfection. The new water cooling coils make it possible to put a dos-a-dos seat, covering the opening in the top at the back com-

pletely, so by removing my top I have a mighty fine two-seated carriage. The 1902 engine is much improved. The Apple generator takes away all sparking trouble and the further cost of battery. I find I have over a third more speed, and, in fact, the whole carriage is perfection. I sincerely hope the Winton people will never give up making this style, as it is just the thing. There is no better carriage for a doctor in bad weather. The top affords perfect protection. It is roomy and comfortable. The new muffler is a wonder; in fact, it cuts the explosion almost out entirely. When the carriage is running on high speed you cannot hear the explosion at all. Give me the Winton every time. I am more than pleased with my second one. I have had but one tire puncture and that from running over a broken bottle. The cost of running my Winton last year was not over 1¼ cents per mile.—Yours, etc., Frank W. Brandon, M. D.

Vehicles for Commercial Service

North Cambridge, Mass., June 2.—Editor MOTOR AGE: My experience in the uses of a self-propelled vehicle show that a much larger application of it is warranted in the transportation of freight. There should not be seen on the streets and roads at this time an animal hauling any kind of wheeled vehicle, especially when the ground is bare of snow and ice. I speak of my experience because it has been in the line of this heavy work and in great variety by which I have obtained a knowledge that such work can be done with success.

A majority of automobiles have been, and still are, of light build, seemingly for racing purposes. So far as the real needs of the time and the usefulness of the automobile are concerned this class of vehicle appears unimportant, except as showing that speed can be obtained on special occasions. My point is that the most important part of the adaptation of this magnificent advancement in applying science to our every-day work is to build the automobile to do all kinds of portable and stationary work in the field and on the highways. This can be done by a type of machine, as has been successfully demonstrated. Not only has it been shown to be successful in the heaviest kind of freighting but it is constructed for all uses, not excepting the transportation of people, both publicly and privately. When this is thoroughly understood and fully appreciated the industry must become world wide.—Yours, etc., Wm. G. Clark.

Relates Troubles for Other's Guidance

Woodstock, Ill., May 29.—Editor *MOTOR AGE*: I have owned and operated two automobiles, both steam. The first one I operated from January to September, 1900. I had considerable trouble with it, one of the worst difficulties being the breaking of balls and subsequent destruction of the cones in the engine bearings, the breaking of spokes and the absence of pilot light. My present vehicle is a Milwaukee Stanhope and weighs, with tanks filled, 1,100 pounds. It has given a great deal better service, is made better, and an easier riding vehicle. I have run it since May, 1901, and after having new bearings put on the engine is practically as good as new. It is equipped with Diamond 3-inch tires and they have given excellent satisfaction, a puncture being a rare occurrence. The cost of repairs, I can hardly estimate with any degree of accuracy, but the Milwaukee people have treated me liberally when, in the earlier use of the carriage, some defective point of the vehicle needed looking after, while the other makers charged exorbitant prices for every little cone or bolt they supplied.

I have used my vehicle more for business purposes than as a touring wagon, the longest distance covered being from Woodstock to Milwaukee in a day, a distance of 67 miles. This ride was not one a person would enjoy as it was accomplished on a day of rain and high winds, the roads over a great portion of the way being very bad. In all the time I have used a steam vehicle, I have never required any other power than my own to reach my destination, although I made a run of 60 miles without the use of the throttle lever, the throttle stem being broken. I ran the machine entirely by the use of the auxiliary throttle.

As for the practical side of the question, the automobile for the use of the country doctor, I would say that a good reliable gasoline vehicle of the heavier type, on the line of the Winton, Haynes-Apperson, or Autocar, would be a great deal more practical than the steamer, although probably not as reliable on some occasions. In the winter, when there is little or no snow, we often have the best roads of the year. A steam vehicle at this time is useless on account of freezing. Then again the high winds of spring blowing over our prairies make the steamer helpless a great many days when roads are excellent. From my own experience and observations, I have come to the conclusion that the next automobile I own will be a gasoline machine of the heavier type, not a racing machine, but a good substantial rig of the types above mentioned.—Yours, etc., E. WINDMUELLER, M. D.

Plans to Enlarge Two-Cycle Motor

Eugene, Ore., May 30.—Editor MOTOR AGE: You are describing a motor 3x3½ and rated at 2½ horse power. If I should build one on this order 6x7 what power would it give if properly made? Of course it would be water cooled. Wouldn't I get more power by making the space in the crank chamber less so that the compression would be higher in the cylinder?—Yours, etc., BARKER GUN WORKS.

An engine of the size indicated should give between 9 and 10 horse power. The other point raised was covered in the first article of the series. By putting the fly-wheels inside the crank case and thus reducing the clearance greater compression will be obtained.

Duryea Discusses Ordinances and Construction

Reading, Pa., May 26.—Editor MOTOR AGE: While some parts of Chicago's new park ordinance may be open to criticism, the argument that it is the duty of the automobilist to look out for pedestrians seems to the

writer to be a good one. While it is true that the reverse practice prevails in Paris, this does not establish a precedent for the rest of the world to follow, but on the other hand, it seems more sensible for the faster moving vehicle to yield the right of way to the slower moving body. On our rivers the raft has the right of way and the steamboat is supposed to get around as best it can. On our streets the street car has the right of way, for it must follow its tracks and therefore it very rightly carries lamps and bells; but a quick moving, readily steered vehicle like a bicycle or an auto can dodge around a pedestrian much quicker than he can get out of the way. Therefore the pedestrian should carry the light so that the automobilist or cyclist may see him and then throw upon the rapidly moving vehicle the requirement of avoiding a collision.

The correctness of this position can be testified to by most cyclists for any old rider knows that ringing a bell may cause the pedestrian to get out of the way or it may not and trouble will follow; whereas, if the pedestrian is allowed to go his way and be passed without molestation the cycler makes the effort to get around him and the chances are that no trouble will occur. Cyclists who have tried both methods will not be uncertain about the results and if automobilists were warned by law not to cause accidents and were punished severely for the accidents they do cause, being left to their own judgment as to how fast they should drive in order not to cause accidents, the results may be better and our laws more sensible. We don't put yokes on our citizens so that they may not get near enough to their neighbors to commit murder but we make laws against murder and murderous assaults and punish the criminal severely. Why this is not the proper plan for assaults by automobiles I am not lawyer enough to explain.

Mr. Elliott's remarks regarding running gears are to the point and his question as to why things are made wrong instead of right is, after 10 years' experience trying to get things right, easily answered. No one man can watch every detail of every job unless he does all the work himself and he must therefore depend upon those who assist him. They have not had the experience and they do not see why things are made as they are or why they should be made one way instead of another and it is this lack of experience, this lack of education, not only on the part of the makers and their workmen but on the part of the users that holds back the automobile in its progress toward perfection today.

Many things apparently self-evident are not seen simply because the men working on it having had no experience do not know what to look for. This is shown by the two sketches in Fig. 3 where the distance rod for adjusting the chain is shown with a turn buckle having right and left threads and two lock nuts. Now since the threaded portions cannot turn the object of the lock nut is to prevent the turn buckle from turning and one lock nut will do this, leaving the thread loose in the other end but two lock nuts will not work satisfactorily at this place for the reason that yielding of the springs twists the distance rod and forces one of the threads to move, gradually loosening one lock nut and sometimes both of them. If one lock nut only is used better results are obtained.

The flexible frame argument is to the point and is the clearest explanation of the matter I have yet seen. It is certainly much needed by the industry for the public's idea on this is certainly hazy. If the frame is to be perfectly flexible some pivotal arrangement should be used making a three point support and when this is done the three wheeled design is closely approximated. It is on this account that we believe in the three wheeler. —Yours, etc., Charles E. Duryea.

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FOR SALE—Powerful four cylinder gasoline surrey. Bargain, $700. Running continuously over rough roads and hills. F. Bennhouse, Mechanicsburg, Pa. 24

ALCOHOL'S TRIUMPH IN FRENCH RACE.

First Big Race Under New Rules Shows Natural Fuel of France to Advantage.

Paris, May 25.—(Special Correspondence.)—Extraordinary interest centered round the northern alcoholic circuit, because, thanks to the Nice-Abbazia interdiction, this was to be the first distance event of the year, and then because it was to finally settle the long pending quarrel between gasoline and alcohol.

The 1901 season had seen the last of the 1,400 to 2,000 monsters. The limit has been brought down to 1,000 kilos. How would these stand the frightful strain of a 950 kilos raid on all kinds of roads and surfaces? That was the other question.

Well, both questions have been answered and the answer is such as could have been wished for by the most sanguine supporters of both the latest pattern vehicle and alcohol. That great northern battle has been fought and won by the new vehicles and by alcohol. The 1902 cars went through the severe ordeal without a hitch. As regards alcohol, it did all that was claimed for it, and a bit more.

We don't mean to say that gasoline is to be turned out of the field; but now that the rival force, the national fuel, has gone successfully through the most trying test, the alcoholic brigade is sure to grow in strength and power.

The weather was of the worst possible description. short showers of rain and hail alternating in quick succession, and when the gale abated, the rain fell steadily on, drenching the men and making the roads, which are not of the very best under any circumstances, frightfully soaked and correspondingly heavy.

In spite of these and other conditions, adverse to speed—such as the new code of rules, which starts the watch going from the instant the competitor unaided enters the ring (I mean the secluded park where the machines are to rest after the day's work) and which makes no deductions for the time occupied by repairs, the winner, Maurice Farman, ex-bicycle champion, managed to cover 865 kilom. of the racing course in the astonishing time of 12 h. 1 m.

It was an old Panhard of the revised and lightened pattern that scored in that memorable event. The second place fell to the lot of the old famous firm, too. Their new Paris-Vienna vehicle could not be turned out in time, so they had to bring down their 1,200 kilos Paris-Berlin cars to the 1,000 legal limit, in order to make them eligible for the circuit. That they succeeded in doing chiefly by putting in hollow axles, remarkably strong and light, which behaved to perfection. It was a matter of general regret that the Mors should not have been permitted, through a last minute incident, to take part in the race. Their duel with Panhard would have proved a rare treat, indeed. The Darracq scored a sensational victory in the light class with the 20 horsepower 645 kilos car, which went right through the double journey without a mishap, finishing in front on both days.

In the motorette and motor cycle departments Renault and De Dion asserted their supremacy once more. The Werner motor cyclette repeated its Paris-Berlin performance by finishing alone in its class.

We must not leave unmentioned the "Lepretre mixture." This is the name of the inventor of that rare good thing which was the success of the day, every winner feeding on that one particular stuff.

There were eighty-one entries and fifty-five men started. The scene at the start was almost fanatical, with so many cars and vehicles of all sizes and types, from the huge 40 horsepower monster to the light autobi, not to mention innumerable bicycles driven by muscular power, assembled in the semi-darkness of the early hours and awaiting the signal to rush.

Paris-Chaloas-Arras (410 kil.) was the first day's journey, while Arras-Boulogne-Paris (512) made up the second day's work. The actual racing distance for both days, after you have deducted from the total the "neutralized" ground, amounted to 865 odd kilometers.

It would be far too long a tale to relate every individual deed of the personages of the two days' drama. So we will hurry to the result.

Here is the order of finish of the chief competitors, placing the competitors in their categories:

MOTOR CARS (650 TO 1,000 KILOS, 2 FILLED SEATS).

		H. P.	
1—Maurice Farman	Panhard-Levassor	40	12:01:52 3-5
2—Jarrott	Panhard-Levassor	40	13:09:12 4-5
3—Rigolly	Gobron-Brillie	18	16:37:09 3-5
4—Le Blon	Gardner-Serpollet	6	18:52:45 2-5
5—Chanliand	Gardner-Serpollet	12	19:03:22 2-5
6—Barbereau	Gardner-Serpollet	6	19:23:02 1-5

LIGHT CARS (EMPTY WEIGHT, 400 TO 650 K., 2 FILLED SEATS).

1—Marcellin	Darracq	20	13:09:22 3-5
2—H. Farman	Panhard-Levassor	16	14:16:14 1-5
3—Rigolly	Gobrou-Brillie	18	16:37:09 3-5
4—Jacques Gondoin	Panhard-Levassor	16	16:55:58 4-5
5—Cozic	Dechamps	20	18:35:29
6—Earl	Clement	16	18:53:10
7—Du Cros	Panhard-Levassor	16	19:06:19 3-5

MOTORETTES (EMPTY WEIGHT, 250 TO 400 K., 1 FILLED SEAT).

1—Grus	Renault-Freres	9	16:10:30 4-5
2—Oury	Renault-Freres	9	16:23:20 1-5
3—Cornner	Renault-Freres	9	17:21:31 4-5
4—Barbarouse	Clement	9	17:35:52 2-5
5—Guillaume	Darracq	..	19:32:13 4-5
6—Corre	Corre	9	33:38:00

MOTOR CYCLES (50 TO 250 KILOS).

1—Bardeaux	De Dion-Bouton	6	16:18:36 3-5

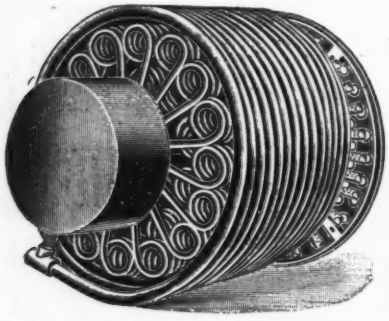
MOTOR BICYCLES (UNDER 50 KILOS).

1—Bucquet	Werner	2	33:53:06 2-5

Such figures are the best comment to this great event, which will go down to history as the northern alcoholic circuit.

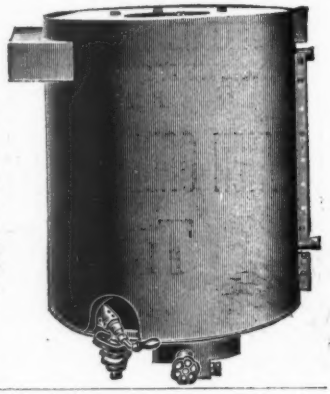
Lindsay Finds Plenty of Business

The Lindsay Automobile Parts Co., of Indianapolis, has moved its plant from 220 South Penn street, to a new factory building just erected at South street and Senate avenue. The new factory is being equipped with machinery of the latest pattern. The company reports bright prospects ahead. It is figuring on furnishing running gears to different makers aggregating over 3,000 sets. It will soon bring out a new transmission, expected to prove an interesting addition to its present business.



IMPOSSIBLE TO SUPPLY THE DEMAND.

We are now shipping to BELGIUM, GERMANY, RUSSIA and to many other foreign countries, which, together with the enormous demand for our home trade and the DOMINION OF CANADA, gives us more than we can do. We have since January first very materially increased our capacity and are still increasing it. We are now weeks behind on our orders, but hope with our increased facilities soon to be able to supply the demand. Our boiler will make from cold water **350 lbs. of steam in 2 minutes and 45 seconds from the lighting of the burner. Our boiler cannot burn out, neither can it explode;** features of the utmost importance to all users of steam.



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Works: NEWARK, N. J., U. S. A.

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Boston Branch: 223 Columbus Ave. **Providence Branch:** 15 Snow St.
Hartford Branch: Am. Cycle Mfg. Co. **Washington Branch:** 817 14th St., N.W.

"TOLEDO" QUALITY TELLS

THE LATEST VICTORY.

Lesna, on a Cleveland, paced by an automobile, won the Marseilles-Paris race last week, against an army of riders on foreign-made machines—two veterans whose fame is world-wide.

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AT HOME AND ABROAD
IN RAIN OR SUN
PACED OR UNPACED

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